

# 2005-2010 Local Mitigation Strategy Plan



**A multi-jurisdiction mitigation plan for:**

**The City of Gulf Breeze  
The Town of Jay  
The City of Milton  
and  
Santa Rosa County, Florida**

*Produced by a cooperative effort through the*

**Santa Rosa County Local Mitigation Strategy Task Force**

*In cooperation with*



**ecology and environment, inc.**  
International Specialists in the Environment

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## Revision Tracking

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**Santa Rosa County**  
**Local Mitigation Strategy (LMS) Plan**

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## Acronyms and Abbreviations

BCR – Benefit Cost Ratio  
BFE – Base Flood Elevation  
C – Celsius  
CDBG – Community Development Block Grant  
CEMP – Comprehensive Emergency Management Plan  
CR – County Road  
CRP – Conservation Reserve Program  
CRS – Community Rating System  
DCA – Florida Department of Community Affairs  
DEM – Division of Emergency Management (part of the Florida Department of Community Affairs)  
DEP – Florida Department of Environmental Protection  
DFIRM – Digital Flood Insurance Rate Map  
DMA2K – Disaster Mitigation Act of 2000  
E & E – Ecology and Environment, Inc.  
EEE – Eastern Equine Encephalitis  
F – Fahrenheit  
FAC – Florida Administrative Code  
FEMA – Federal Emergency Management Agency  
FIRM – Flood Insurance Rate Map  
GIS – Geographical Information System  
HMGP – Hazard Mitigation Grant Program  
IFAS – Institute of Food and Agricultural Services  
LMS – Local Mitigation Strategy  
LOC – Level of Concern  
MEMPHIS - Mapping for Emergency Management, Parallel Hazard Information System  
MPH – Miles Per Hour  
NFIP – National Flood Insurance Program  
NHC – National Hurricane Center  
NOAA – National Oceanic and Atmospheric Administration  
NRCS – Natural Resource Conservation Service  
NFWMD – Northwest Florida Water Management District  
PDM – Pre Disaster Mitigation Grant Program  
SFR – Single Family Residential  
SR – State Road  
USDA – United States Department of Agriculture  
USGS – United States Geological Survey  
WNV – West Nile Virus  
WWTP – Waste Water Treatment Plant

## **Santa Rosa County**

### **Local Mitigation Strategy (LMS) Plan**

#### **Section One**

##### **EXECUTIVE SUMMARY**

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Santa Rosa County and the municipalities of Gulf Breeze, Jay and Milton are threatened by a number of natural hazards that could cause costly disasters in neighborhoods, business districts, and rural areas. These hazards potentially endanger the health and safety of the population, and jeopardize economic and environmental vitality. Because of the importance of avoiding or minimizing the vulnerabilities to these hazards, the public and private sector interests of Santa Rosa County have joined together to create a Local Mitigation Strategy (LMS) Task Force to undertake a comprehensive, multi-jurisdictional planning process that has culminated in the publication of the “Santa Rosa County Local Mitigation Strategy Plan.”

This LMS Plan replaces a plan adopted in the late 1990’s by the four local government jurisdictions of the County. This new plan was developed as a result of the U.S. Congress passing the Disaster Mitigation Act of 2000, or DMA2K. The Federal Emergency Management Agency (FEMA) administers the DMA2K program at the national level. The Florida Department of Community Affairs (DCA) Division of Emergency Management (DEM), through its Bureau of Recovery and Mitigation, administers the program at the state level.

DMA2K requires the State of Florida to maintain a complete, adopted and approved state mitigation plan. In order to accomplish this, the county and municipalities must also develop a complete, adopted and approved local mitigation strategy plan consistent with the provisions of DMA2K. The original plan of the late 1990’s adopted by the County and municipalities was not consistent with DMA2K. Thus, a redevelopment of the plan was undertaken. The West Florida Regional Planning Council, which had served as staff to the LMS Task Force since the 1990’s, was asked to update the County’s LMS plan. Some \$20,000 was provided by FEMA by way of DCA/DEM to assist in the effort. In December 2004, Ecology & Environment, Inc. was asked to complete the LMS planning document and to staff LMS meetings.

The LMS Task Force has conducted detailed studies to identify the hazards threatening the jurisdictions of Santa Rosa County and to estimate the relative risks posed to the community by those hazards. Information has been gathered from a variety of sources (including property appraiser, planning offices, and federal programs). This information has been used by the LMS Task Force to assess the vulnerabilities of the facilities and neighborhoods of the County to the impacts of future disasters involving those hazards. Using this information the committee has worked to identify proposed projects and programs that will avoid or minimize these vulnerabilities to make the communities of Santa Rosa County much more resistant to the impacts of future disasters.

Vulnerabilities and impacts to the community were then developed into “mitigation strategies.” Mitigation strategies are designed to identify ways to reduce vulnerability to

disasters. The mitigation strategies were assembled in a five-year plan that allows the County and municipalities to co-join these efforts with other local planning and budgeting processes.

Adoption of the plan is a multi-jurisdictional function. The County and each municipality must independently accept and adopt the LMS Plan by resolution or ordinance. Adoption (and plan approval by FEMA) is required in order to be eligible for disaster dollars following a Presidential Disaster Declaration or to apply for Pre-Disaster Mitigation funds (PDM) (which were created by the passage of DMA2K).

This document details the work of the Santa Rosa County LMS Task Force over the past several years to develop the planning organization, to undertake the needed technical analyses, and to coordinate the mitigation initiatives that have been proposed by the participating jurisdictions and organizations. Through publication of this local mitigation plan, the committee continues to solicit the involvement of the entire community to make the people, neighborhoods, businesses and institutions of Santa Rosa County safer from the impacts of future disasters.

**Santa Rosa County**  
**Local Mitigation Strategy (LMS) Plan**  
**Section Two**

**INTRODUCTION AND PURPOSE**

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**2.1     Introduction**

The Santa Rosa County LMS Task Force has been established to make the population, neighborhoods, businesses and institutions of the community more resistant to the impacts of future disasters. The Task Force has undertaken a comprehensive, detailed evaluation of the vulnerabilities of the community to all types of natural hazards in order to identify ways to make the County and its municipalities more resistant to natural disasters. This document reports the results of that planning process for the current planning period.

**2.2     Purpose**

The Santa Rosa County LMS Plan is intended by the Task Force to serve many purposes. These include the following:

*Provide a Methodical, Substantive Approach to Mitigation Planning*

A step-by-step process has been utilized by the Santa Rosa County LMS Task Force to develop the plan. The process relies on soundly based, methodical planning concepts. Vulnerabilities to natural hazard disasters are identified. Mitigation initiatives are proposed that allow the County to avoid or minimize those vulnerabilities. Each step in the planning process builds upon the previous. A high level of assurance is developed so that each mitigation initiative proposed by the LMS Task Force has a valid basis for both their justification and priority for implementation. One key purpose of this plan is to document the process and to present its results to the community, along with state and federal agencies to justify potential mitigation funding.

*Enhance Public Awareness and Understanding*

The LMS Task Force is interested in finding ways to make the community aware of natural hazards. Additionally, there is a need to inform the community about the impact mitigation planning can have in the County. The plan identifies the hazards threatening County. It provides an assessment of the relative level of risk they pose. Details on specific vulnerabilities of the neighborhoods, business districts, and rural areas are provided. The plan includes a number of proposals on avoiding or minimizing vulnerabilities. This information is helpful to individuals

that wish to understand how the community could become safer from the impacts of natural disasters.

The LMS Task Force organization also includes a Public Information Subcommittee. The purpose of this subcommittee is to provide information and education to the public regarding ways to mitigate disasters. The public information committee has been active in communicating with the public and engaging interested members of the community in the planning process. This document, and the analyses contained herein, is the principal information resource for this activity.

#### *Create a Decision Tool for Management*

The Santa Rosa County LMS Plan provides information needed by the managers and leaders of local government, business and industry, community associations and other key institutions and organizations. This information will allow these people and entities to take actions to address vulnerabilities to future disasters. It also provides proposals for specific projects and programs that are needed to eliminate or minimize those vulnerabilities.

These proposals, called “mitigation strategies” in the plan, have been justified on the basis of their economic benefits using a uniform technical analysis, as well as prioritized for implementation using ten objective criteria. This approach is intended to serve as a decision tool for management and the community. Local government, business, and citizens can use the plan to learn why the proposed mitigation initiatives should be implemented. Additionally, this tool can demonstrate which project should first be implemented, and show the economic and public welfare benefits of doing so.

#### *Promote Compliance with State and Federal Program Requirements*

There are a number of state and federal grant programs, policies, and regulations that encourage or even mandate local government to develop and maintain a comprehensive hazard mitigation plan. This plan is specifically intended to assist participating local governments to comply with these requirements. The plan enables them to quickly respond to state and federal funding opportunities for mitigation-related projects. The plan defines, justifies and prioritizes mitigation initiatives that have been formulated through a technically valid hazard analysis and vulnerability assessment process. Those interested in applying for grants are better prepared, using this plan, to quickly and more easily develop the necessary grant application materials for seeking state and federal funding.

#### *Enhance Local Policies for Hazard Mitigation Capability*

A component of the hazard mitigation planning process is the analysis of the existing policy, program and regulatory basis for control of growth and

development. Essentially, experiences, data, and facts of emergency planning (pre- and post-disaster) are brought together with day-to-day land use planning policy. Additionally, current mitigation-related policies of local government are compared to emergency planning policies relating to mitigation. This allows for a comparison of the hazards that threaten the jurisdiction and the relative risks they pose to the community. When risks of a specific hazard are not adequately addressed in the community's policy or regulatory framework, the impacts of future disasters can be even more severe. The planning process utilized by the LMS Task Force supports detailed comparison of the community's policy controls to the level of risk posed by specific hazards. This comparison supports and justifies efforts to propose enhancements in the policy basis for could or should be promulgated by the involved local jurisdictions to create a more disaster-resistant future for the community.

#### *Assure Multi-Jurisdictional Coordination of Mitigation-Related Programming*

A key purpose of the mitigation planning process is to ensure proposals for mitigation initiatives are reviewed and coordinated among jurisdictions (municipalities and County). In this way, there is a high level of confidence that mitigation initiatives proposed by one will be compatible with the interests of others. The multi-jurisdictional aspect of the process reduces the probability of duplication or overlooking a project. The operating procedures of the Task Force mandate that all proposed mitigation initiatives, regardless of their origin, be coordinated among all of the participants in the planning prior to their approval for incorporation into the plan.

#### *Provide a Flexible Approach to the Planning Process*

The LMS Task Force is flexible in meeting the analysis and documentation needs of the planning process. The Task Force can accept directives from the Board of County Commissioners or City Councils to develop special reports or research. Additionally citizens, businesses, non-profits, and other parties can request special work be done for their issues. The Task Force can then make recommendations to local governments to facilitate action.

The Task Force also has access to a wide variety of information. Members, local government offices, and other sources allow for the group to bring information together for planning purposes. Information that would otherwise be used for purposes other than mitigation can be brought together to study mitigation issues. These issues can be constructed to become mitigation initiatives for incorporation into this plan.

Each section of the LMS Plan presents detailed information to support these planning functions. The remainder of this plan describes the planning organization developed by the Task Force, as well as its approach to managing the planning process. It then summarizes the results of the hazard identification and vulnerability assessment process,

and addresses the current policy basis for hazard management by the participating jurisdictions and organizations. The plan also documents the structural and non-structural mitigation initiatives proposed by the participating jurisdiction to address the identified vulnerabilities. The plan concludes by addressing the goals and objectives of the Task Force for a five-year planning period, during which this plan will continue to be expanded and refined.

### **2.3     How To Use The Document Sections and Appendices**

The LMS Plan follows a logical sequence of organization. Beginning in Section 3, the formation and organization of the LMS Task Force is discussed (Section 3), followed by a thorough analysis of the natural hazards existing in the County (Section 4). In Section 5, a risk assessment is conducted that delineates areas where the greatest possibility of impact by a natural hazards could occur. Finally, Section 6 provides an outlook of goals and objectives of the LMS Task Force over the five year planning period (2005 – 2010).

Appendices can be located in the back of the LMS Plan. Each appendix correlates by the number of the Sections and Subsections of the plan. For example, maps and tables correlating to the natural hazards will begin with the number “4” (correlating with Section 4 of the plan). Cross-referencing is done in some instances (particularly where one portion of Section 5 relates to major data input first used and identified in Section 4).

An Adobe Acrobat file (portable document file, or PDF) version of the plan is maintained in order to quickly and inexpensively provide the document and its information to local governments and the public at-large. The PDF version is indexed using the “bookmarks” feature of Acrobat. Although the plan is password protected to prevent unauthorized and unapproved changes, features such as printing and block text copy are permitted.

### **2.4     Requesting Additional Information**

Additional information about the plan may be obtained by contacting the following:

**Santa Rosa County Emergency Management  
4499 Pine Forest Road  
Milton, FL 32583  
850-983-5360 voice**

*Or*

**Attn: Staff to the Santa Rosa County LMS Task Force  
Ecology & Environment Inc.  
220 W. Garden St, STE 404  
Pensacola, FL 32501  
850-435-8925 voice**



**Santa Rosa County**  
**Local Mitigation Strategy (LMS) Plan**

**Section Three**

**BYLAWS AND OPERATING PROCEDURES**

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**3.1     Introduction**

This section of the Santa Rosa County LMS Plan describes the characteristics of the Task Force as an organization, as defined in its bylaws, and the basic procedures for conducting the planning process, which are described in the Task Force's operating procedures. Both of these documents are provided in this section, and summarized below.

The Santa Rosa County Local Mitigation Strategy Task Force consists of two components: A Steering Committee and a Working Group.

**3.2     The Bylaws of the Task Force**

*(See Appendix 3.2 to view the LMS Task Force Bylaws)*

The Santa Rosa County LMS Task Force has adopted bylaws to establish its purpose and responsibility, to create a structure for the organization, and to establish the other fundamental characteristics of the Task Force as a community service organization. The Bylaws are provided as an appendix to this document, along with an attachment that identifies the members and their alternates.

The Bylaws establish two components that develop and promote mitigation programs in the County and the three municipalities. These two components are the Steering Committee and the Working Group.

The Steering Committee consists of appointed members. This includes membership from each local government jurisdiction, the County's school district, American Red Cross, and other entities. This Committee establishes policy for the Task Force and has the power to approve changes/revisions to the LMS Plan, including approval of initiatives on the priorities listing of projects.

The Working Group consists of citizens, businesses, non-profits, and other representation. Its purpose is to provide a forum of discussion and to make recommendations to the Steering Committee concerning issues that come before the LMS Committee.

### **3.3     The Task Force's Operating Procedures in Developing the LMS Plan**

The planning process undertaken by the Task Force is generally described in the operating procedures of the group, which are enclosed in this section as the Bylaws. The process described in the procedures mainly addresses how hazard mitigation initiatives are to be developed and processed. These procedures involve both a technical approach to the planning and an organizational methodology for incorporating mitigation initiatives into the Santa Rosa County LMS Plan. The general technical analysis process is that identified here:

#### *Santa Rosa County Hazard Mitigation Planning Process*

The planning process has been started with the development of the Task Force as an organization and obtaining participation from the local government jurisdictions and key organizations and institutions. The planning work conducted to develop this document relies heavily on the expertise and authorities of the participating agencies and organizations, rather than on detailed scientific or engineering studies. The Task Force is confident that the best judgment of the participating individuals, because of their role in the community, can achieve a level of detail in the analysis that is more than adequate for purposes of local mitigation planning. As the planning process described herein continues, more detailed and costly scientific studies of the mitigation needs of the community can be defined as initiatives for incorporation into the plan and implemented as resources become available to do so.

#### *Establishing the planning schedule*

As indicated in the exhibit, the Task Force initially established a planning schedule for the upcoming planning period that allows the participants to anticipate their involvement in the technical analyses and evaluations that they will be asked to do. At the outset of the planning period, the Task Force defined the goals that the planning process is attempting to achieve, as well as the specific objectives within each goal that will help to focus the planning efforts.

Conducting the needed analyses and then formulating proposed mitigation initiatives to avoid or minimize each and every vulnerability of the community to future disasters is an enormous effort. The effort must take place over a long period of time. Therefore, for any one planning period, the goals and objectives set by the Task Force were intended to help focus the effort of the participants, for example, by directing attention to certain types of facilities or neighborhoods, or by emphasizing implementation of selected types of proposed mitigation initiatives.

### *Hazard Identification and Risk Estimation*

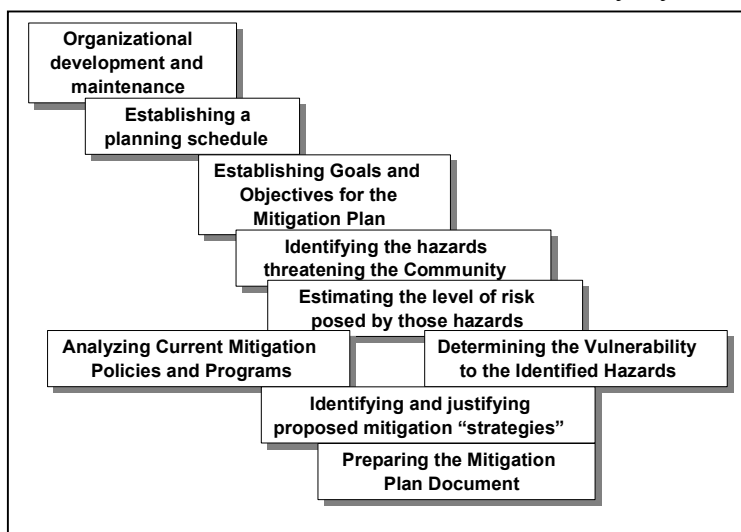
The Task Force then identifies the natural, technological and societal hazards that threaten all or portions of the community. Where possible, specific geographic areas subject to the impacts of the identified hazards are delineated. The Task Force also uses general information to estimate the relative risk of the various hazards as an additional method to focus their analysis and planning efforts. The Task Force compares the likelihood or probability that a hazard will impact an area, as well as the consequences of that impact to public health and safety, property, the economy, and the environment. This comparison of the consequences of an event with its probability of occurrence is a measure of the risk posed by that hazard to the community. The Task Force compares the estimated relative risks of the different hazards it has identified to highlight which hazards should be of greatest concern during the upcoming mitigation planning process.

Depending on the participating jurisdiction, a variety of information resources regarding hazard identification and risk estimation have been available. The planners representing the jurisdiction have attempted to incorporate consideration of hazard specific maps, including flood plain delineation maps, whenever applicable, and have attempted to avail themselves of GIS-based analyses of hazard areas and the locations of critical facilities, infrastructure components and other properties located within the defined hazard areas.

Estimating the relative risk of different hazards is followed by the assessment of the vulnerabilities in the likely areas of impact to the types of physical or operational agents potentially resulting from a hazard event. Two methods are available to the Task Force to assess the communities' vulnerabilities to future disasters.

### *Vulnerability Assessment*

The first avenue is a methodical, qualitative examination of the vulnerabilities of important facilities, systems and neighborhoods to the impacts of future disasters. For the participating jurisdictions and organizations, this is accomplished by the individuals most familiar with the facility, system or neighborhood through a guided, objective assessment process. The process ranks both the hazards to which the facility, system or neighborhood



is most vulnerable, as well as the consequences to the community should it be disrupted or damaged by a disaster. This process typically results in identification of specific vulnerabilities that can be addressed by specific mitigation initiatives that can be proposed and incorporated into this plan. As an associated process, the Task Force also reviews past experiences with disasters to see if those events highlighted the need for specific mitigation initiatives based on the type or location of damage they caused. Again, these experiences can result in the formulation and characterization of specific mitigation initiatives for incorporation into the plan.

The second avenue for assessment of community vulnerabilities, as illustrated in the exhibit, involves comparison of the existing policy, program and regulatory framework promulgated by local jurisdictions to control growth, development and facility operations in a manner that minimizes vulnerability to future disasters. The Task Force members can assess the individual jurisdictions' existing codes, plans, and programs to compare their provisions and requirements against the hazards posing the greatest risk to that community. If indicated, the participating jurisdiction can then propose development of additional codes, plans or policies as mitigation initiatives for incorporation into the Santa Rosa County Local Mitigation Plan for future implementation when it is appropriate to do so.

#### *Developing Hazard Mitigation Initiatives*

This process enables the Task Force participants to highlight the most significant vulnerabilities, again to assist in prioritizing subsequent efforts to formulate and characterize specific hazard mitigation initiatives to eliminate or minimize those vulnerabilities. Once the highest priorities are defined, the Task Force participants can identify specific mitigation initiatives for the plan that would eliminate or minimize those vulnerabilities.

Ecology and Environment, Inc. (the consulting firm responsible for developing this plan on for Santa Rosa County, as well as with staffing the LMS Task Force meetings) will establish a methodical, objective procedure for characterizing and justifying the mitigation initiative proposed by each participating jurisdiction for incorporation into this plan. This procedure involves describing the initiative, relating it to one of the goals and objectives established by the Task Force, and justifying its implementation on the basis of its economic benefits and/or protection of public health and safety, as well as valuable or irreplaceable resources. A "benefit to cost" ratio is established for each initiative to demonstrate that it would indeed be worthwhile to implement when or if the resources to do so became available. Further, each proposed mitigation initiative is "prioritized" for implementation in a consistent manner by each participating organization using a set of ten objective criteria.

In characterizing a mitigation initiative for incorporation into the Task Force's plan, it is important to recognize that the level of analysis conducted by each organization involved has been intentionally designed to be appropriate for this stage in the planning process. That is, it is the interest of the Task Force to have a satisfactory level of confidence that a

proposed mitigation initiative, when it is implemented, will be cost effective, feasible to implement, acceptable to the community, and technically effective in its purpose. To do this, the technical analyses conducted, including the development of a benefit to cost ratio for each proposal, have been based on a straightforward, streamlined approach, relying largely on the informed judgment of experienced local officials. The analyses have not been specifically designed to meet the known or anticipated requirements of any state or federal funding agency, due largely to the fact that such requirements can vary with the agency and type of proposal. Therefore, at the point when the organization proposing the initiative is applying for funding from any state or federal agency, or from any other public or private funding source, that organization will then address the specific informational or analytical requirements of the funding agency.

Each mitigation initiative proposed for incorporation into the plan is formulated and submitted to the Task Force for consideration by an agency, organization, business or individual that has the authority or responsibility for its implementation. This avoids the artificiality of proposing mitigation initiatives when it is unclear who would implement them and if the authority to do so is actually available.

#### *Developing the Local Mitigation Plan*

Once the above procedure is completed by the agency or organization developing the proposed mitigation initiative, the information used to characterize the initiative is submitted to the Task Force for review and inter-jurisdictional coordination. At this point, an initiative is considered to be a “pending initiative” that is being processed for incorporation into the plan, when it then becomes an “approved initiative.”

On receipt of a pending initiative, the Planning Committee first evaluates the merits of the proposal and the validity of the judgments and assumptions that went into its characterization, as well as considers its potential for conflict with other jurisdiction’s programs or interests. The Planning Committee also assures that the proposal is consistent with the goals and objectives established for the planning period and confirms that it would not duplicate or harm a proposal submitted by another jurisdiction or agency. If there is such a difficulty with a proposed initiative, it is returned to the submitting organization for revision or reconsideration.

Once the Planning Committee has reviewed and coordinated the submitted initiative, and is satisfied regarding its merit, it is forwarded to the Steering Committee for formal consideration regarding incorporation into the Santa Rosa County Local Hazard Mitigation Plan. The Steering Committee again can assure that the proposed initiative is consistent with the goals and objectives for the planning period and would be beneficial for the community as a whole if and when implemented. If so, the Steering Committee then votes to incorporate the proposed initiative into the strategy. The proposed initiative is then considered to be approved.

During routine updates of the Santa Rosa County LMS Plan, each mitigation strategy included in the plan is evaluated to determine if it is still valid or should be removed from the plan, or whether its implementation should be a priority or deferred until a later time.

#### *Approval of the Current Edition of the Plan*

At the end of each planning period, a plan document such as this is prepared for release to the community and for action by the governing bodies of the jurisdictions and organizations that participated in the planning process. To facilitate this action, Section 8 of the plan provides hazard assessment information and proposed initiatives in separate discussions grouped by jurisdiction or key organization. With this approach, the governing body only needs to approve, endorse or act on its own component of the plan, and to address the implementation of mitigation initiatives its own representatives proposed. Consequently, there is no need for one jurisdiction or organization to be concerned with acting on proposals made by and for another.

#### *Implementation of Approved Mitigation Strategies*

Once incorporated into the Santa Rosa County LMS Plan, the agency or organization proposing the initiative becomes responsible for its implementation. This may mean developing a budget for the effort, or making application to state and federal agencies for financial support for implementation. This is the approach utilized by the Santa Rosa County LMS Task Force because only the jurisdiction or organization itself has the authorities or responsibilities to implement its proposed mitigation initiatives. The current status of implementation of mitigation initiatives incorporated into the plan is discussed in the next section.

#### Benefits of the Planning Process

It is important to emphasize that the procedure used by the Santa Rosa County LMS Task Force is based on the following important concepts:

- A multi-organizational, multi-jurisdictional planning group establishes specific goals and objectives to address the community's vulnerabilities to all types of hazards.
- It utilizes a logical, stepwise process of hazard identification, risk evaluation and vulnerability assessment, as well as review of past disaster events, that is consistently applied by all participants.
- Mitigation initiatives are proposed for incorporation into the plan only by those jurisdictions or organizations with the authorities and responsibilities for their implementation.
- The process encourages participants to propose specific mitigation initiatives that are feasible to implement and clearly directed at reducing specific vulnerabilities to future disasters.
- Proposed mitigation initiatives are characterized in a substantive manner, suitable for this level of planning, to assure their cost effectiveness and

technical merit, as well as coordinated among jurisdictions to assure that conflicts or duplications are avoided.

**Santa Rosa County**  
**Local Mitigation Strategy (LMS) Plan**  
**Section Four**

**Hazards Assessment**

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**4.1     Introduction**

This section of the Santa Rosa County Local LMS Plan summarizes the results of a vulnerability assessment process undertaken by the Task Force members. The intent of this section is to provide a compilation of the information regarding the hazards threatening Santa Rosa County. In this section, information relevant to the entire planning area is compiled. An overview of the analyses is provided as required by DMA2K requirements.

The hazards that will be analyzed in this section are both natural and human in origin. However, DMA2K does not require an assessment of technological and/or societal hazards. Analysis of hazardous materials (fixed facility and transportation), terrorism, and computer viruses are considered technological. Exceptions may be taken to what is defined as “technological.” For example, dams are human caused. Likewise, some flooding is caused by development. These situations, however, are akin to natural disasters and are covered in this plan. Otherwise, technological mitigation is not covered under this plan or in the analysis of this section.

Primary attention is given to natural hazards (with sub-sections) considered reasonably possible to occur in the County. These hazards include:

- Hurricane
- Tropical Storm
- Storm Surge
- Flooding
- General Flooding
- Dam Safety
- Land Erosion
- Sinkholes
- Expansive Soils
- Severe Storms
- Tornado & Waterspout
- Thunderstorms and Lightning
- Winter Storms
- Heat Wave and Drought
- Wildfire



The hazards that are considered unlikely or impossible in the County will be briefly analyzed and commented on will be included. These hazards include:

- Earthquake
- Avalanche
- Land Subsidence
- Landslide
- Tsunami
- Volcano

## 4.2 Hazard Identification

*(See Appendix 4.2 series for maps and statistical information)*

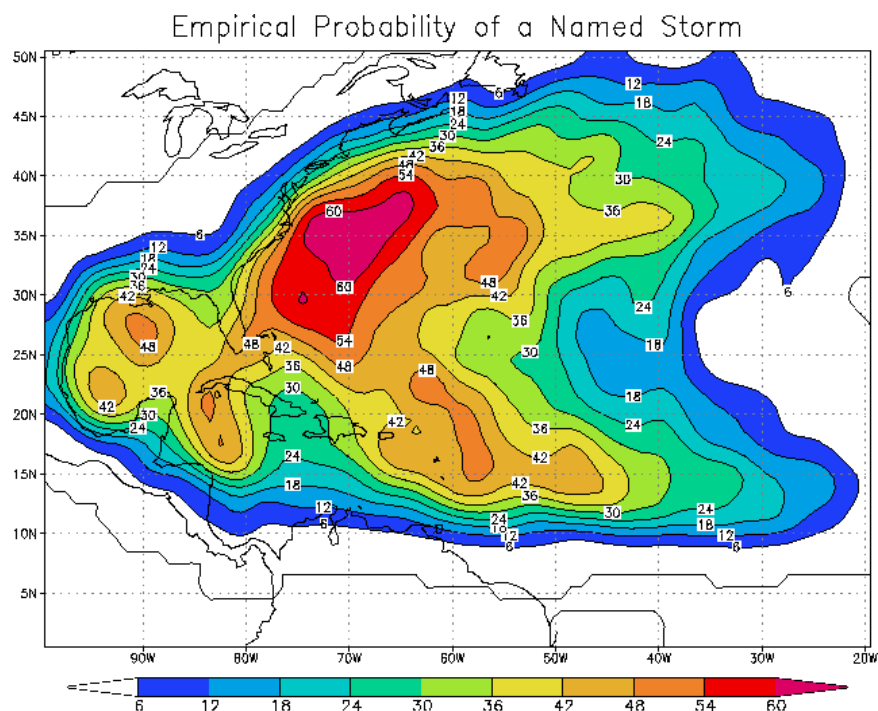
The technical DMA2K planning process begins with hazard identification. In this process, all of the natural hazards that threaten the communities are identified. This has been conducted through thorough research by planning staff to the LMS Committee, input from members and citizens, and data provided by FEMA and other sources.

Kinetic Analysis Corporation and the University of Central Florida have established a Natural Hazards Assessment of Santa Rosa County (provided as Appendix 4.2 of this plan). Appendices that follow this section are custom developed by LMS Committee planning staff and provide an often more detailed assessment of the hazards. The more detailed assessment is particularly pertinent to each municipality and in some cases to Navarre Beach.

### 4.2.A Hurricane

Note to readers: Storm surge is evaluated in Section 4.2.A.1 of this chapter.

According to the National Oceanic and Atmospheric Administration (NOAA), Santa Rosa County has an approximate 33% chance of being impacted by a tropical storm or hurricane from the Atlantic / Caribbean / Gulf of Mexico basin in any given year (based



**Figure 1:** Percentage probability of a hurricane striking in any given year in the Atlantic/Gulf/Caribbean Basin. Santa Rosa County rests on the 33% contour. (Source: <http://www.aoml.noaa.gov/hrd/tcfaqG.html#G12>).

on data from 1944–1999).

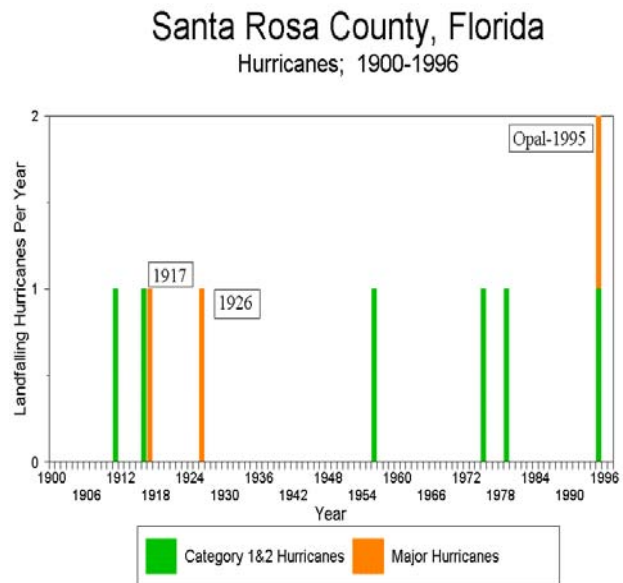
Historically, Santa Rosa County has experienced a peak 5% chance of hurricane landfall as indicated in Table 1 below. This peak percentage occurs during the month of September; a typical expectation being that the month of September falls right in the center of peak hurricane season -- between mid-August to late October. However, the official, nationally recognized hurricane season starts June 1<sup>st</sup> and spans to November 30<sup>th</sup>.

Month	Named Storm	Hurricane	Major Hurricane
June	4%	<2%	<1%
July	4%	<2%	<1%
August	7%	2%	<1%
September	15%	5%	1%
October	4%	<2%	<1%
November	1%	<1%	<1%

**Table 1:** Historical Trends of Tropical Storm/Hurricane Impacts by Percentage Odds.  
Source: Atlantic Oceanographic and Meteorological Laboratory, NOAA, Miami  
<http://www.aoml.noaa.gov/hrd/tcfaq/G13.html>

However, the public should not be lulled into thinking that a 5% chance of a hurricane impacting the county in September is low. This represents a four in one hundred chance that Santa Rosa County could receive a hurricane in that month compared across the entire North Atlantic basin (hundreds of thousands of square miles stretching from Texas to the west coast of Africa). These odds are actually statistically high.

Nine hurricanes struck Santa Rosa County between 1900 and 1996. Three of these storms were major (1917, 1926, and Opal in 1995). Figure 2 for Santa Rosa County shows the number



**Figure 2:** Annual Hurricane Landfalls in Santa Rosa County, Florida 1900 – 1996 (Source: <http://www.aoml.noaa.gov/hrd/tcfaq/tcfaqG.html#G12>).

of hurricanes making landfall in the county (source: Atlantic Oceanographic and Meteorological Laboratory, NOAA, Miami). Additionally, Hurricane Ivan (a major hurricane) struck the County in 2004.

High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the County. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. In no instance should a resident of a manufactured home stay in the home in hurricane conditions. This creates an immediate need for sheltering and adds to traffic loading on area roadways (where evacuating residents of nearby coastal counties are already fleeing north). Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters in the County, although shelters and some critical facilities are shuttered. There is an increased awareness of the need for shutters due to local emergency management, commercial, state, and federal government awareness campaigns.

In recent history, hurricane approaches towards West Florida have caused major traffic backups on Interstate 10 (Hurricanes Opal – 1995 and Floyd – 1999 are perfect examples). Hurricane Opal evacuees from Escambia, Santa Rosa, Okaloosa and Walton Counties caused traffic speeds to decrease to near standstill on I-10. Additionally, substantial evacuee numbers would be anticipated from residents of south Santa Rosa County, as well as neighboring Okaloosa and Escambia County on Pensacola Beach as citizens left coastal areas for inland locations. This could impact roadways such as U.S. 98 (Navarre Parkway and Gulf Breeze Parkway), SR 87, SR 281 (Garcon Point Road, the Garcon Point Bridge, and Avalon Boulevard), CR 197 (Chumuckla Highway), and SR 89. The number of evacuees traveling in or through the county, attempting to find shelters or motels, or being stuck in highway traffic is a real threat to emergency operations, coordination, resources, and management. Roadways built below flood levels create a risk of trapping people on roadways in vehicles (even if they are not victims of floodwaters) if hurricane force winds reach the area before all persons are evacuated or sheltered.

In September 2004, the eyewall of Hurricane Ivan impacted and devastated all areas of Santa Rosa County. The eye made landfall just west of Gulf Shores, Alabama. The right quadrant of the storm (the strong side) came across the County with Category 3 force winds. Hurricane force winds extended from coastal communities at Navarre Beach, Gulf Breeze, and Navarre, and extended inland through Milton and Pace north to Jay and the Alabama state line. The hurricane served as a reminder of the power of a major hurricane and its impacts across the entire area.

#### ***4.2.A.1 Storm Surge***

*(See Appendix 4.2.A.1 for Storm Surge Maps)*

Santa Rosa County is a coastal county. However, storm surge from East, Escambia and Pensacola Bays being pushed from the south up the Escambia, Yellow, and Blackwater river valleys of the Pensacola Bay Area basin could combine with river flooding. By far, the largest area of the county susceptible to storm surge are those areas lying up-river from the Pensacola Bay Area Basin. This is assumed due to the storm surge zones in Southern Santa Rosa and neighboring Escambia Bay “Hurricane Storm Tide Atlas 1999” showing lands surrounding the floodplain of the Escambia and East Bays as being in a storm surge zone; primarily land area south of I-10. A number of residents are vulnerable to storm surge in these areas up to 13.1 feet above mean sea level in a Category 5 hurricane. Since this corresponds with flooding in the East/Blackwater and Escambia Basin, and is well documented as being vulnerable to flooding on Flood Insurance Rate Maps of the area, a more complete analysis and mitigation discussion will be deferred to LMS sections on “flooding.”

In a hurricane, the county is vulnerable to substantial flooding from tropical rains since the County serves as the central drainage area for three major river systems in the region; the Yellow, Escambia, and Blackwater Rivers. Although the majority of urban areas are not in floodplains, impact to roadways, some businesses, and homes stresses already limited emergency management resources. Additionally, many persons who live in flood-prone areas are low or very low income. This creates substantial need for public assistance in the form of cash, loans, sheltering, food, and resources for recovery. This can create a long-term response and recovery hardship for the County’s emergency management staff.

Hurricane Ivan (2004) demonstrated the power of storm surge and the overall risk to the County. Storm surge heights of fifteen feet and higher were recorded along the Gulf of Mexico, Santa Rosa Sound, Escambia, East, and Blackwater Bays. The measurement of storm surge heights from research conducted by FEMA after the hurricane does not include wave height. The impact of storm surge in Gulf Breeze, the Fair Point Peninsula, Navarre, Navarre Beach, Milton, Pace, and surrounding coastal and bayfront communities was massive.

Being that Santa Rosa is a coastal county, much of the flooding (and flood damage) is a result of storm surge inundation along the Gulf Breeze Peninsula in the southern portion of the county (See Appendix1). Storm surge creates upland riparian flooding conditions as river systems experience a stall in downriver flow and water essentially begins flowing upriver. Many of the communities located along these river systems are subsequently impacted the hardest.

Flood prone areas of the county include portions of the City of Milton near various drainage system ditches and former wetlands now dredged and filled, some residents and locations along the Escambia River, especially near the Town of Pace, some businesses and residents along I-10 leading across the Escambia Bay, and other locations where localized flooding may occur along numerous wetlands, streams, or sinkhole lakes. The real hazard lies in those areas affected by both strong storm surge activity and high flood areas. These areas include virtually the entire area of Garcon Point, the City of Gulf

Breeze, and the swamp areas located along the eastern bank of the Escambia River toward the southern outlet into the Escambia Bay. Substantial mitigation efforts including buyouts of property have been ongoing since 1995. However, some residential dwellings remain vulnerable in the county to flooding since they were either not eligible for buyouts or chose not to participate in voluntary FEMA buyout programs.

#### **4.2.B. Flooding**

The Southeast's humid subtropical climate lends itself to very rainy periods (including rains from tropical systems, air mass thunderstorms, and frontal systems). Flooding is a real and a routinely expected event in Santa Rosa County. Erosion along banks and gullying in upland areas is present in the county and can present unique situations in prevention of topsoil loss and property damage. Flooding is considered the more dangerous of these two hazards as it relates to local government efforts to ensure public safety and to reduce the hazards to the community. These two issues, related to rainfall and the humid climate, are analyzed separately below.

##### **4.2.B.1 *General Flooding***

*(See Appendix 4.2.B.1. series for maps)*

More than any other natural or human-caused catastrophe, flooding has plagued Santa Rosa County's citizens, emergency operations, and mitigation efforts throughout the history of the community. Flooding is the primary emergency concern along the Escambia River, Yellow River, Blackwater River and associated tributaries, sloughs, river oxbow lakes, sinkhole/sand hill lakes and isolated swamps (locally called "bays.").

Serious flooding has occurred in 1915, 1917, 1924, 1929, 1936, 1950, 1953, 1956, 1972, 1975, 1979, 1985, 1994, 1995, and 1998. In 1970, the flood level of the Blackwater River reached 86.11 feet in relation to the National Geodetic Vertical Datum (NGVD); the largest recorded flood elevation in the county. In 1995, Hurricane Opal caused the most recorded devastation to homes, public buildings, and residences near the major rivers in Santa Rosa County; causing nearly \$3 billion in property damages. Interstate 10 was closed for a period of time because of damage to the bridges over the Escambia River and Escambia Bay. Hundreds of residents were displaced from homes, only to return to total devastation. Even homes built to the 100-year base flood elevation standards received water.

The Escambia River in western Santa Rosa County is not a major flooding concern for the county since 8,037 acres of the river's adjacent lands in the County are owned by the Northwest Florida Water Management District (NFWMD) and serve as a potable watershed protection area for Santa Rosa and neighboring Escambia County. These lands are vacant in perpetuity. In addition, flooding is not a major concern for the immediate area adjacent to the Yellow River in the eastern portion of the county. Similar to the Escambia River, the NFWMD owns roughly 5,519 acres of adjacent property.

Also impacting Santa Rosa County is flooding in adjacent counties. For example, flooding in neighboring Escambia and Okaloosa Counties causes people to seek temporary shelter in Santa Rosa County. Sometimes, search and rescue operations for people in these counties requires Santa Rosa County fire departments or other members of support agencies to participate.

Another cause of flooding in the County is urban runoff. The city of Milton experiences the majority of this problem. Development in now filled wetlands in combination with storm water runoff from homes, streets and commercial districts has caused devastation to homes and a few businesses in Milton. Mitigation purchases of properties as well as ditch cleaning efforts have solved some of these problems, but some homes continue to be victims of flooding.

Flooding can also severely impact Santa Rosa County's road network. Many rural roads are not paved and are therefore highly subject to washout. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding. This can create a scenario of stopping road traffic evacuating from other locations and trapping people in their vehicles in traffic jams. This is a critical issue if this is in combination with an approaching hurricane. Response and recovery resources in the County are usually overwhelmed in times of serious flooding. Out of the 2,207 total miles of State and County roads in Santa Rosa County, 331 miles (15%) are located in the 100-year flood zones and 14 miles (7%) are located in the 500-year flood zone. These figures do not count the possible hundreds of informal, undocumented roads located in the more rural areas of the county.

Flooding impacts the agricultural community by ruining crops, hay supplies, and meat production operations. From 1996 to 2002, natural hazards (of which, flooding being a leading culprit) caused over 1.7 billion dollars damage to Florida's crops (<http://www.nws.noaa.gov/om/hazstats.shtml>). According to the Santa Rosa County Soil Survey, approximately 90,000 acres (14%) of land area in the county is used for agriculture or pasture. Based on this knowledge, there is potential need for mitigation in the agricultural sectors in this county.

Public health is an immediate threat during and following flooding. Raw sewage from septic tanks and overflowing sewage treatment systems creates a high risk for the public and emergency responders. Dead animals can be present. And with the advent of West Nile Virus (WNV) and Eastern Equine Encephalitis (EEE), mosquito infestations are now even more of a concern.

It should be noted that whereas the causes of many of the wastewater system failures were not caused by natural disasters *directly*, they could inevitably be an unfortunate casualty as a result of other system failures. For example, the chart above details that many of the floods and spills of the treatment plants were caused by power outages and failure of the electric grid (See Table 2). The grid failures could be the result of the

occurrence of a natural disaster. It should be noted that these figures are *estimates* based upon available data.

Action	Santa Rosa County	Municipalities	Private	Total by Cause
Anthropogenic	0	8	1	<b>9</b>
Due to Power Complications	3	8	1	<b>12</b>
Other/Unknown Cause	12	82	32	<b>126</b>
<b>Total by Area</b>	<b>15</b>	<b>98</b>	<b>34</b>	

Table 2: Wastewater Plant Overflow in Santa Rosa County, 1996-2003. Source: Florida Department of Environmental Protection, 2003.

Most importantly, flooding inside or outside of Santa Rosa County impact the local economy by causing dollars to be spent on relief and reconstruction needs, rather than contributing to savings or long-term financial planning by families and businesses. The public tax base of the county is also harmed during each flood event.

Mitigation efforts in the late 1990's and early 2000's are reducing the numbers of individual homes and businesses subject to flooding. Millions of dollars have been invested by the federal and state governments, not to mention local-government matching funds and in-kind donations, to promote buy-outs and property purchases. As of October 2001, Santa Rosa County experienced \$7,375,300 worth of property buyouts under the NFIP program. This figure includes the unincorporated areas of Santa Rosa County, the City of Gulf Breeze, and the City of Milton.

Many homes once in the county's floodplains have been purchased by FEMA dollars and demolished. Properties have become public property owned by the local governments. Building permits are issued strictly in accordance with the requirements of the National Flood Insurance Program (NFIP). Purchases of 13,556 acres of land in the County by the Northwest Florida Water Management District and Preservation 2000/Forever Florida programs in the Escambia River/Yellow River drainage basin is also mitigating future damage by having floodplains designated as natural conservation areas in the county's Comprehensive Land Use Plan. The only uses allowed on such lands are recreational in nature. Although the severity of flooding may now be reduced in the county, the potential for disaster continues.

NFIP Flood Insurance Rate Maps, available at the Building Inspections Office, and the Local Mitigation Strategy Plan latest edition shows floodplains and floodprone areas of the county and municipal jurisdictions.

#### **4.2.B.2 Dam Safety**

*(See Appendix 4.2.B.2. for map)*

Although dam safety might be considered a technological hazard, the primary concern is the potential for flooding downstream and down the valley from a dam where flooding might not naturally occur. Thousands of people have lost their lives in dam mishaps in the history of the nation. Although there are no situations where thousands of people could be potentially impacted by the failure of a dam in the county, the potential does exist where one or more homes or businesses (and therefore the people occupying such structures) could be impacted. Therefore, the issue deserves the attention of this plan. This section is considered separate from Section B.1 of this chapter (dealing strictly with natural flood) because of the technological relation to a human-made structure and the regulatory framework in place for dam safety. Dam safety is also considered in the LMS plan in support of the County's and Gulf Breeze's Community Rating System programs already in place.

The Northwest Florida Water Management District is responsible for the permitting, inspection, and revocation of permits for dams in Santa Rosa County that meet certain criteria, per the guidance of Chapters 373.314 and 373.316 Florida Statutes and Chapters 40A-4 and 40A-44 Florida Administrative Code (FAC). Dams are regulated only as applications are received for new facilities or repairs are made to existing structures. FAC 40A-4 regulates facilities that are used for other than farm purposes, while FAC 40A-44 regulates farm-related facilities.

There are generally two types of dams found in Santa Rosa County. These types include impoundments where water is normally kept behind the structure and structures positioned in gullies to prevent or reduce further erosion during wet periods.

The numbers of dams, their types, and regulating authority under FAC are shown in the table below.

Dam Type	Active Permits	Expired Permits	Permits Exempt	Permits Withdrawn /Void	Permits Denied
Agricultural	56	8	1	3	1
Non- Agricultural	11	0	0	3	0
<b>Total</b>	<b>67</b>	<b>8</b>	<b>1</b>	<b>6</b>	<b>1</b>

Table 5: Registered Dam Activity in Santa Rosa County as of 2003.  
Source: North West Florida Water Management District, 2003

#### **4.2.C Land Erosion**

*(See Appendix 4.2.C. for map)*



The Gulf Coastal Plain consists of gravels, sands, clays and silts that form the soils of the County. Rock outcrops of ironstone (hardpan) can be found in a few locations, mainly along road cuts in the northeastern portions of the county. Otherwise, soft sediments that prevail can be vulnerable to erosion when topography, vegetation, and the inability to absorb water combine to form energy that weathers away soils.

Sheet erosion, rills, gullies, and alluvial fans are the most commonly observed erosional features in the County. Most of these features are associated with disturbances in natural vegetation, poor management of agricultural lands, silvicultural operations, building construction, and road construction/ maintenance projects. The slightest degree of slope can cause water to flow. As it begins to move, small erosional features develop in the unconsolidated soft soils. Such erosion, left unchecked, can damage drainage ditches, fill stormwater retention ponds with sediment, harm sensitive ecosystems, and cause erosion into property, including structures. Most erosion of this nature occurs in the northern two thirds of the County and along unpaved roadways in hilly areas. There is considerable potential for erosion in the cities of Gulf Breeze and Milton, as well.

The Blackwater Soil and Water Conservation District of the Natural Resources Conservation Service (NRCS) has analyzed the potential for erosion in the county for years as a part of its normal duties, in support of the Federal Farm Bill, and the Conservation Reserve Program (CRP). Highly erodible lands are identified as a part of these efforts. The following Table 3 and map show the potential for erosion in the county.

**Highly Erodible Soil Types of Santa Rosa County**

Shown by soil name and corresponding number of soils depicted in the *Soil Survey of Santa Rosa County Florida* (USDA May 1980).

Dothan Fine Sandy Loam (10) with slopes of 5 to 8 percent  
Eto Loam (12 & 13) with slopes 2 to 8 percent  
Fuquay Loamy Sand (15) with slopes 5 to 8 percent  
Gullied Land (17)  
Lakeland Sand (23) with slopes 12 to 30 percent  
Lucy Loamy Sand (26) with slopes 5 to 8 percent  
Orangeburg Sandy Loam (32) with slopes 5 to 8 percent  
Pits (36)  
Tifton Sandy Loam (43) with slopes 5 to 8 percent  
Troup Loamy Sand (45 & 46) with slopes 5 to 12 percent  
**Total Acres of Highly Erodible Land: 40,178**

Santa Rosa County has a total area of 655,360 acres. As indicated above, out of the total acreage in the county, 6.1% of the area contains soils of a highly erodible nature and 28% of a potentially highly erodible nature. In total, over a third of the county's land area (34.1%) is susceptible to erosive conditions (See Appendix 2).

Professional and consultation services available in the community generally lead to quick elimination or control of erosion in these areas. Most erosion incidents are minor in

nature and are corrected with terraces, hay bales, mulch, tilling practices, silt screens, water turnouts, or other features. The NRCS provides professional advice and design services to private property owners on erosion issues. Emphasis is on agriculture, but all property owners in the county and municipalities are eligible for assistance. It should be noted NRCS nor any other professional or consultation service can address erosion issues on private lands unless permission is granted to enter and work on the property.

NRCS also sponsors the CRP. This program provides federal funding to farmers who remove highly erodible or potentially highly erodible lands from agricultural use and placing it in silvicultural uses (which provides natural soil cover through leaf litter) reducing erosion potential. One hundred sixteen (116) contracts were active with NRCS under the CRP program as of November 2003.

The Florida Division of Forestry can also assist property owners when dealing with issues of erosion on silvicultural lands. Professional engineering services are often used to examine and eliminate erosion issues on public lands.

Control of erosion on municipal or county property is the responsibility of the local government. Oftentimes, stormwater flow from private property is the source of water flow responsible for these erosion problems. Water also begins as runoff from roadways themselves and as seepage where water tables are high and roadcuts cut into these small elevated aquifers. The County and municipalities either employ or retain professional engineers to evaluate, design, and provide solutions and mitigation to such problems. The public works departments are responsible for following guidance of the engineers, as well as best management practices issued to generally reduce environmental consequences of runoff, to eliminate or reduce erosion on public properties, particularly roads and roadside swales and ditches. Santa Rosa County and Gulf Breeze get credits

#### **Potential Highly Erodible Soil Types**

Shown by soil name and corresponding number of soils depicted in the *Soil Survey of Santa Rosa County Florida* (USDA May 1980).

Angie Variant (2)  
Dothan Fine Sandy Loam (9) with slopes 2 to 5 percent  
Kureb Sand (20) with slopes 0 to 8 percent  
Lakeland Sand (22) with slopes 5 to 12 percent  
Orangeburg Sandy Loam (31) with slopes 2 to 5 percent  
Red Bay Sandy Loam (39) with slopes 2 to 5 percent  
Tifton Sandy Loam (42) with slopes 2 to 5 percent  
Troup Loamy Sand (44) with slopes 0 to 5 percent  
**Total Acres of Potential Highly Erodible Land: 183,192**

Source: Blackwater Soil and Water Conservation District,

Table 3: Erodable Lands in the Santa Rosa County County. Source: Santa Rosa County Soil Survey, Natural Resource Conservation Service, 1980.

for their engineered mitigation efforts relating to erosion and stormwater control as participants in the Community Rating System of the NFIP.

Stormwater control through planning and design, engineering and management can also eliminate or reduce erosion. This is particularly true within development.

River bank erosion is a natural process that cannot be easily controlled by engineering or design. There are few problems identified in the county or municipalities where eroding riverbanks are causing loss of real property and structures in developed areas. Rivers where bluffs occur include Blackwater, Big Coldwater, Big Juniper, and their tributaries. The lower Blackwater (from near the entrance of Clear Creek westward), the Yellow, Escambia and East Bay River are slower rivers with wide floodplains and little, if any, erosion. Steephead valleys surrounding these rivers, however, may be subject to erosion. All rivers in the county, however, naturally meander. On each river curve, river current energy is primarily found on the outside of the meander, causing a cut in outside banks (thus causing bluffs as the bank erodes). The inside of the meander is a depositional area where sands, gravel and clays are found. There is a potential risk in the county on some rivers where homes could be built in locations where meanders could eventually erode to near or at the foundation.

The most structural solution to riverine erosion is installation of seawalls (which require permits from the Department of Environmental Protection). Site selection for building (away from the outside of cutting banks on rivers) is a way to avoid being in an erosive area. An understanding of river dynamics, proper site planning and construction should eliminate such problems. Many miles of riverfront properties are owned by the State of Florida's Division of Forestry as Blackwater River State Forest or as properties of the Northwest Florida Water Management District. Thus, mitigation through public land acquisition and conservation has occurred along many stream courses and rivers.

Coastal erosion is caused by marine or estuarine wave action and, to some extent, wind action. Santa Rosa Island at Navarre Beach is subject to the greatest potential for coastal erosion on its Gulf of Mexico beaches. Hurricanes and coastal storms can remove or replace sand from offshore sand bars. Dunes are built by wind action combined with natural vegetation's ability to stop wind blown sand on its leaves and have individual grains drop to the ground. Over time, dunes on the island can reach elevations of twenty feet. When vegetation is removed (by construction, trampling by visitors walking between roads and parking areas to beaches, etc.), cuts in the vegetation lines can lead to blowouts and overwash of the island, causing massive shifts in sand structure and dunes.

Erosion on Santa Rosa Island occurs at a slow, unobservable pace, or rapidly during storms and hurricanes. Such erosion is a natural, daily process of barrier island dynamics.

Problems with beach erosion arise when construction of infrastructure and buildings do not take into consideration these dynamics. Mitigative techniques have been developed by the federal, state and local governments to reduce or eliminate the potential for unnatural erosion. Revegetation and fencing to form dunes, lines that prohibit

construction seaward of the primary dunes (Coastal Construction Control Line), dune crossovers to eliminate dune trampling, and in some cases dredging and beach renourishment have been used.

Navarre Beach was greatly impacted with erosion by Hurricane Opal in 1995. Gulf water moved thousands of tons of sand over roadways, sidewalks, and yards. Additional evaluation will be made in Chapter B.3 below on Storm Surge.

Coastal erosion also affects mainland portions of the county and City of Gulf Breeze. The Fairpoint Peninsula, on which Navarre, Holley-By-The-Sea, Midway, and Gulf Breeze are located, is an ancient coastal structure that once served as the primary beach before the formation of Santa Rosa Island at the conclusion of the Wisconsin Ice Age some 18,000 years ago. Fairpoint Peninsula is surrounded by Santa Rosa Sound on the south, and Pensacola and East Bays on the north. The peninsula is made up of ancient dunes where soil formation has occurred. Marine erosional processes from daily wave and wind action to major storms and hurricanes have eroded back some of the land. Additionally, wave action from boats, personal watercraft, and barges along the Gulf Intracoastal Waterway can add energy to waves through wakes, accelerating erosion.

Exposed light orange/brown bluffs of 10 to 25 feet elevation are visible on the peninsula in some areas. Some of these sandy bluffs can be seen in the Naval Live Oaks Area of Gulf Islands National Seashore in Gulf Breeze. Construction on top of such bluffs is a risk. In some places in Gulf Breeze, construction has occurred and efforts must be made by property owners or through coordinated efforts with the state to shore up eroding locations (Deadman's Island is an example).

Along the Fairpoint Peninsula, portions of Garcon Point, and along the east bay of Blackwater Bay near Ward Basin Road, seawalls are often used to elevate property and to eliminate erosion along the shorelines. Seawalls require a state permit to be constructed and must meet standards that protect the environment while serving a structural purpose. Seawalls can be used to fill wetlands in some instances. On the other hand, they can be used to shore up otherwise eroding properties in hazard areas along



Figure 3 - Hurricane Opal's 1995 storm surge and wave height of fourteen to twenty feet washed away roadways and buried them in sand. Notice road washout and sand coverage caused by storm surge and wave action erosion. Photo is of U.S. Highway 98 looking westbound towards Fort Walton Beach in Okaloosa County.

coastal locations and are recognized as a mitigative technique when used properly with considerations made for natural environments.

#### 4.2.C1 Sinkholes

The Florida Geological Survey of the Department of Environmental Protection (DEP) indicates in its “Sinkhole Type, Development and Distribution in Florida” map and description indicates Santa Rosa County in its entirety is located in an area where sinkholes seldom, if ever occur. DEP’s statewide sinkhole database indicates no sinkholes in the county. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan.

#### 4.2.C2 Expansive Soils

According to the *Soil Survey of Santa Rosa County Florida* (USDA May 1980), two types of soils in the county are considered vulnerable to expansion. One is an upland soil type found near rivers, while the other is a tidal/salt marsh soil type that is seldom, if ever, built upon. These soils are known as shrinking and swelling or “expansive soils.” Another way of describing expansive soils is the change of volume of a soil with a change of moisture content.

The following table lists soils having moderate to high shrink swell potential in Santa Rosa County. Only those soils with an associated risk of “High” are listed:

Soil Series	Shrink-Swell Potential	Total Acreage in County	Percentage of total soils in County
Angie Variant Loam	High	1,775	0.3%
Bohicket	High	8,500	1.3%

Table 6: Expansive Soils in Santa Rosa County. Source: Soil Survey of Santa Rosa County, Florida; May 1980; Table #14.

Angie Variant Loams are well-drained, nearly level soils primarily on broad flats between streams and along drainage ways. They are generally found in natural vegetative state in the northern sections of the county. Problems are generally encountered when constructing roads on these soils (additional fill and compacting overcome these limitations).

Bohicket soils are poorly drained soils in tidal marshes at the mouths of major streams and rivers. They are flooded daily by tidal water. There is little potential in these soils for urban development or infrastructure due to the frequent flooding. Most acreage of this soil type is owned by public agencies as preserves or are restricted from development due to wetland regulations.

The hazards listed below have been analyzed to determine that impact would be minimal or non-existent.

#### **4.2.D Severe Storms**

The Severe Storms segment of the LMS Hazards Assessment will include thunderstorms, (including hail, lightning, and high winds) (exclusive of tornado and hurricane which are covered in other sections of this chapter), winter weather, and heat and drought collectively.

##### ***4.2.D1 Tornado & Waterspout***

Tornadoes and waterspouts are small-scale weather phenomena as a vortex of rising air. Tornadoes occur over land, and waterspouts occur over water.

The Fujita Scale is the basis of measurement of the strength of tornadoes. Nationwide, 76% of all tornadoes are F0 or F1 weak intensity and account for 4% of total deaths. Twenty five percent are F2 or F3 strong tornadoes, accounting for 29% of total nationwide tornado deaths. Finally, 1% are F 5 violent tornadoes and account for 67% of all tornado deaths nationwide.

From 1980 to 1999, the National Severe Storms Center has calculated Santa Rosa County as having about 0.8 to 1.0 tornado days each year. This is the average number of days that tornadoes occur on over the course of one year. By comparison, portions of the Great Plains have 1.6 to 2.0 tornado days each year.

The following table provides a reference to the number of documented tornadoes in Santa Rosa County (1955 – 1995):

DATE	TIME	DEAD	INJURED	FUJITA SCALE
APR 30, 1963	0630	0	0	F2
DEC 10, 1967	0700	0	0	F2
JAN 15, 1971	1105	0	0	F0
JAN 12, 1975	1015	0	12	F1
SEP 23, 1975	0830	0	0	F1
MAR 21, 1976	0620	0	0	F0
OCT 31, 1985	1030	0	0	F0
NOV 17, 1987	0402	0	0	F1
NOV 08, 1989	0430	0	0	F0
DEC 12, 1989	1015	0	0	F1
JAN 23, 1992	0110	0	0	F0
APR 26, 1993	0530	0	0	F1
JUN 25, 1994	0730	0	0	F0
NOV 11, 1995	0932	0	0	F1
MAR 16, 2001	0345	1	11	F2

Table 4: Tornado touchdowns in Santa Rosa County. Source: Tornado Project Online  
<http://www.tornadoproject.com/index.html>

As recently as March 2001, an early morning tornado struck a residential area on the edge of Wausau, killing one person and injuring 11 others, one severely. Nine homes were destroyed, and 14 were damaged. The homes were a mixture of trailers, "manufactured," and frame houses. The death and critical injury occurred as a manufactured home was lifted and "smashed to the ground." Other injuries occurred as a manufactured home was "thrown a hundred feet and exploded into hundreds of pieces of contorted metal and twisted wood." The path was initially estimated at 10 miles long, 300 yards wide, and F2 in intensity. (Source: Tornado Project Online).

The greatest likelihood of tornado occurrence is during April and May. The greatest likelihood of an F2 or greater is in April (See Figure 4). (Source: National Severe Storms Laboratory).

Because of the unpredictable patterns of tornadoes, and because the entire state, including Santa Rosa County, has a relatively high reoccurrence frequency, the entire County is vulnerable to tornado damage.

The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing or apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes and low rent projects because of their size and densities.

The most common and active weather threat in Santa Rosa County for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. Lightning is the most severe threat to the public. High winds relating to gust fronts and microbursts can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

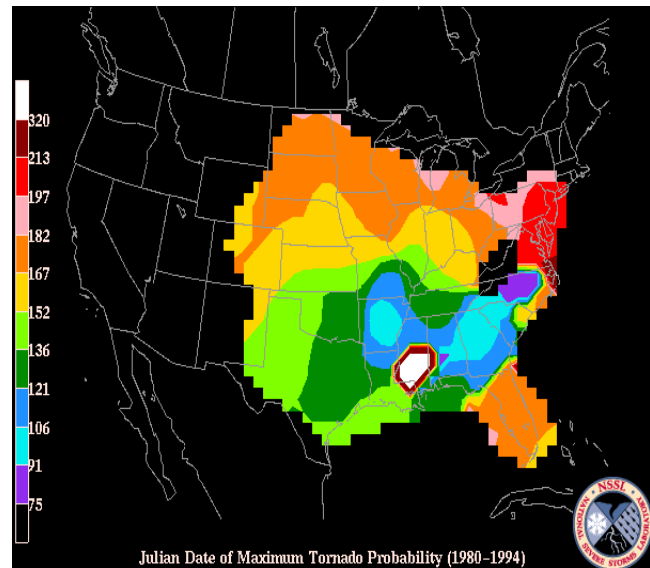


Figure 4 - Probability of a tornado in North America. Santa Rosa County's greatest probability for any tornado is in April and May of each year. The color depicted for the Santa Rosa County area on this maps shows Julian days 121-136 and the most vulnerable (May). Source: National Severe Storms Laboratory.



#### 4.2.D2 Thunderstorms and Lightning

The National Severe Storms Laboratory of the National Weather Service classifies a thunderstorm as severe when it contains one or more of the following phenomena:

- Hail 3/4" or greater
- Winds gusting in excess of 50 knots (57.5 mph)
- A tornado

Santa Rosa County has 70 to 90 thunderstorm days each year. Consistent with averages from around the State of Florida, this is some of the highest frequency in the nation. The vast majority of these days are from May to September. However, thunderstorms may occur during any month of the year.

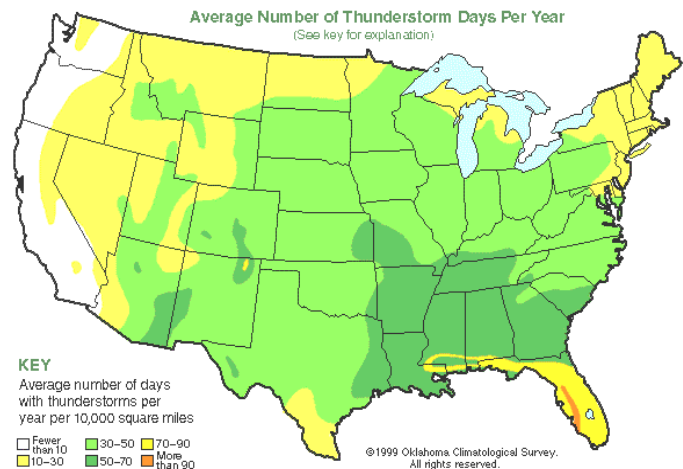


Figure 5 - Average number of days with thunderstorms per 10,000 square miles. Santa Rosa County receives 70 to 90 thunderstorm days per year. Source: Oklahoma Climatological Survey

Aside from being able to produce tornadoes, thunderstorms can cause damage with high winds (see Figure 5). These winds are usually caused by cold upper level air descending from the top of a thunderstorm to the ground. If the speed of decent is rapid, these cold “microbursts” can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as “straight line winds.” These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

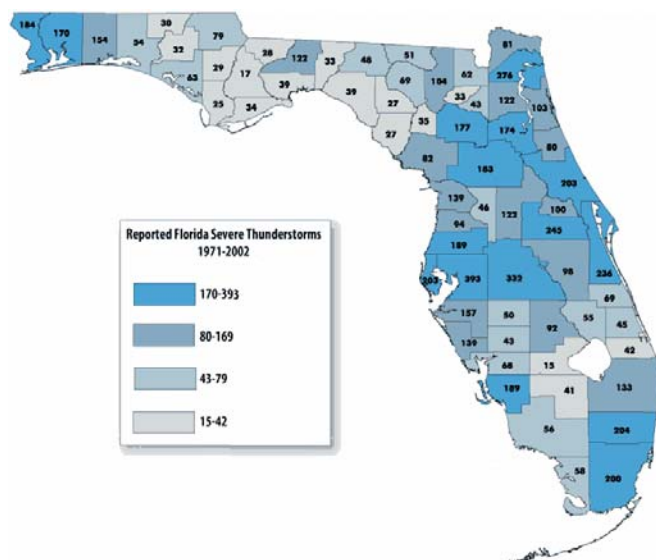


Figure 6 – One hundred and seventy severe thunderstorms were reported in Santa Rosa County from 1959 to 2002. This number is probably low due to the low number of persons per square mile in the county that could report such severe weather before the advent of NEXRAD systems up until the 1990’s, consistent with the figures of other small population/rural counties in the state. Source: National Weather Service.

Florida leads the nation in lightning strikes per year (closely correlating with the number of thunderstorm days per year). In addition, Florida also leads the nation in lightning fatalities with 9 recorded deaths in 2002. Santa Rosa County is estimated to have 4 to 8 flashes per square kilometer per year throughout the county, based upon data from 1996 to 2000 (source: U.S. Lightning Detection Network). This ranks as typical for Florida and the Southeast,



but well above average for the nation as a whole. Most thunderstorms in the County occur due to air mass heating during hot summer days. Additionally passage of cold fronts in the autumn, winter and spring can trigger lines of thunderstorms.

The primary risk to the county and its residents in thunderstorms is traffic accidents on wet roads and some flash flooding of prone areas, followed by lightning damage to electronics and structures, strikes on people, and wind and hail damage. Mitigation against thunderstorms is best accomplished by staying indoors in a well build structure or inside of a motor vehicle with a metal frame and body. Most people injured or killed by thunderstorms or lightning are outdoors, not inside. Electronic equipment and data loss prevention is best accomplished with surge protection devices, proper grounding, unplugging, or other electrical safety systems. Animal and crop losses due to thunderstorms, lightning and hail are more difficult to mitigate against. Cattle and horses are sometimes killed while seeking shelter under trees (the very place lightning may strike in fields). Hail can devastate crops, although most hail in the area is fortunately pea sized and falls for a short duration. Mitigation for livestock and crops is generally handled through financial reimbursement with farm or commodity insurance.

#### **4.2.D3 Winter Storms**

Winter weather in Santa Rosa County can include snow, ice, sleet (freezing rain), hard freeze temperatures, and frost. The most common winter event is frost, followed by hard freeze.

Freezes occur most every winter, with the average winter minimum low occurring near January 20 with a temperature of 20° F. (-6.6° C.). Generally, the second night following the passage of a strong cold front is the coldest night when skies are clear and humidity is lowest. Most low temperatures involving freezes occur at night and in the hours near dawn. In most instances, temperatures even on the coldest winter days rise above freezing during daylight hours. Such freezes are climatologically expected in this region of Florida.

A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes are most vulnerable. Unmitigated older structures are probably the most vulnerable structures, with manufactured housing (due to its off-grade construction and placement technique) is also vulnerable. Mitigation occurs when individuals take actions during construction or for a freeze to protect pipes with wrapping forming a layer of insulation, and/or keeping water moving through pipes by leaving a faucet on.

Home and business heating is accomplished locally with electricity, natural gas, or propane appliances. A few individuals may use other methods, such as kerosene heaters or wood fireplaces or stoves. Temperatures lower than 15° F. (-9.4° C.) for an extended period would likely cause County Emergency Management to open a shelter for those who had inadequate heating of their homes.

Since tropical or subtropical crops are generally not grown in northern and western Florida in the winter freeze season, agricultural damage so often associated with winter freezes in the state are all but absent in Santa Rosa County. Ill or old animals, or unprotected animals exposed to a night of freezing wind, are most vulnerable. During a very severe freeze, some ornamental plants may receive damage, and some poultry operations may experience difficulties keeping fowl warm in brooder houses in the county. Mitigation is generally accomplished through farm heating units and allowing animals to enter barns or shelters.

Icing, glaze, and sleet are rare but real possibilities in the county. A large ice storm affected portions of North Florida in the 1980's in the Lake City to Wildwood corridor of I-75 about 300 miles east of Santa Rosa County with devastating results on traffic flow. Some five inches of ice accumulated on I-75. The State of Florida had no means of ice removal in such a situation, and mutual aid resources from neighboring states were needed. A similar incident in Santa Rosa County would likely cause total paralysis of the community and its roadways, including I-10. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. The possibility of need for shelter would be great in order to keep people warm and safe. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

Snow in Santa Rosa County is considered a very rare and exciting event. Neighborhoods come to life with children playing outdoors when it snows. A single snow "event" over five or ten years is probably the average. A few big wet flakes and a dusting on the ground on a Christmas Eve (as occurred in 1988) was an occasion worth celebrating and remembering for young and old across West Florida! During the past fifty years, there have been approximately twenty-five events of "trace amounts" of snow, and about four measurable snowfall events of up to four inches of accumulation. The March 10, 1993 "Superstorm" provided one of the heaviest snowfalls on record for the area (4 inches). Snow generally will melt off in about six to eight hours, if indeed it takes that long (more often melting occurs in minutes). Such an event will cause schools to close. Snow generally accumulates on natural surfaces, while roadways remain open, albeit slippery on some bridges. Generally, the risk of snow and the chances or needs for mitigation of snow events are virtually zero in the county.

#### **4.2.D4 Heat Waves and Drought**

Heat waves usually occur over five to ten continuous days along the northern Gulf Coastal region and West Florida. The Gulf of Mexico's presence tends to moderate temperatures and form coastal thunderstorms, reducing heat levels and providing coastal sea breeze front rains.

Droughts are more frequent and cyclical in the area. Seasonal climatological droughts occur in April and October. Despite the assumption that the southern portion of Florida receives the highest temperatures due to sheer geography, the highest recorded heat

waves have occurred in the Florida Panhandle. To date, the highest recorded temperature in Florida was set in the Town of Monticello at a searing 109 degrees Fahrenheit (See Figure 6). Whereas this record was not set in Santa Rosa County specifically, it should be noted that this temperature was recorded only 180 miles away.

When heat waves occur, large high-pressure systems generally become entrenched over the Southeastern states. Once stagnation occurs and weather systems do not move away, heat can build up in the summer months and cause temperatures to climb into the upper 90° F. range (35° C.) or above. The general threat to the community is to agricultural crops, livestock, poultry, and individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. Mitigation efforts might focus on evaluation of vulnerability, providing adequate shelters for people, and maintaining mutual aid agreements to ensure a supply of generators for electrical purposes at critical facilities or agricultural facilities.

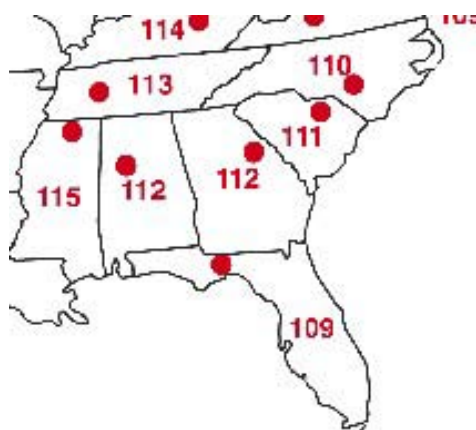


Figure 6: Highest Recorded Temperature in Florida. Source: NCDC, <http://wf.ncdc.noaa.gov/img/climate/severeweather/sa-thigh.gif>

Drought has impacted the county in a number of ways. Bay swamps saw a decline in the levels of natural water levels to near 15 feet below normal

water lines during the four-year drought from 1999 to 2002. Agricultural losses occurred, primarily with summer crops. Demand on local municipal and private water supply systems to the public caused some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers. Although mitigation cannot bring about rainfall, reliance on groundwater sources can create harsh conditions for water pumps and generators, especially older models. A need for upgrade of such facilities may exist.

Firefighting increases as drought deepens. Since the county is mostly rural and open and forested lands are a prominent part of the landscape, the ability to obtain water from fire hydrants or “dry hydrants” (essentially wells and piping connected to the underlying Floridian Aquifer or surface lakes or ponds to allow for rapid pumping of water by fire trucks) is an important means of combating fire during drought. (A more thorough analysis of fire hazards is provided in Section 4.2.F of this chapter.)

#### **4.2.E Wildfire**

*(See Appendix 4.2.E. series for maps)*

With probably 85% to 90% of the land in the county vacant, and with a most locations outside of floodplains and swamplands consisting of natural vegetation historically

related to the Longleaf Pine/scrub oak forests of the Southeast (a fire dependent ecology), Santa Rosa County is vulnerable to wildfire.

Natural fires can be caused primarily from lightning. More likely, human-induced fires are a more likely cause of fires in the county. This includes intentional fire (arson) or accidental causes (escaping trash fires, cigarettes, sparks from passing railcars, motor vehicle fires on roadsides that spread to woodlands, or house fires that expand to wildlands).

During droughts, wildfire is a significant concern to a number of residential areas and even whole communities. Soils and plant communities contribute greatly to the potential for a fire in the sandhill region of the county, but fires may occur at practically any location. Although not the only identifying characteristic to identify wildfire-vulnerable areas, those locations with “Lakeland Fine Sand” (as shown in agricultural soil guides for the county) generally have fire dependent plant species growing in them. The Sunny Hills subdivision and surrounding environs, constructed in sand hills where natural vegetation is conditioned to burn and regenerate, is of particular concern. Additionally, a major correctional facility is located in this sand hill region.

Vacant fields, woodlands, lots and acreage connect communities to the rural/urban interface. This could allow fires to come into subdivisions and neighborhoods in urban and suburban areas... a potentially catastrophic situation.

Land use in the county is often focused on timber plantations. There is substantial acreage of forest grown for pulpwood and timber production.

Prescribed burning alleviates the potential for wildfire in much of the county. It is of agricultural importance to purposely burn (in a controlled manner) understory and fuel on the ground to reduce the potential of a fire going out of control.

Currently, the Florida Department of Forestry is currently supporting a large state-wide wildfire risk assessment using new spatial technologies. These technologies enable forest managers to observe and plan for reducing wildfire risk to consistent encroachment of urban areas to forestlands. Specifically, the Division of Forestry is developing FRAS (Fire Risk Assessment Application), a GIS-based interface software package that will be used to assess wildfire hazard in proportion to a host of terrestrial, man-made phenomenon. The official goals of the program include:

- 1) To identify and define individual elements that compose wildfire risk and hazard in the State of Florida.
- 2) Map statewide fuel sources.
- 3) To model and map “Levels of Concern” (LOC). Meaning: areas where significant areas of fuel reduction work must involve cooperative efforts between State, public, and private landowners.
- 4) Allow for location sensitivity analysis for the identified LOC’s in order to make changes to input variables

- 5) Facilitate the updating of the model for changes in evolving land uses and change in fuel characteristics.

#### 4.2.F Other Hazards

##### 1. **Earthquake**

Although the U.S. Geological Survey National Seismic Hazard Mapping Project (1996) indicates there is a 1.5%g peak acceleration rate for earthquake hazard (this is considered very minimal risk), there have been a series of small seismic events within 75 miles of northern Santa Rosa County that deserve analysis in this plan in order to justify it as a “non-impact” or “virtually no impact” risk. The table below shows a record of seismic activity in the area.

Date	County (Alabama)	Epicenter near (Alabama)	Lat	Long	Depth (in KM)	Magnitude (M) (Richter)	Felt At or Located At
6/13/29	Mobile	Mobile	30.7	88			
12/10/74	Escambia	Huxford	32.35	87.47			
1/6/84	Clarke	Jackson	31.61	87.65		3.0	Jackson and Walker Springs
5/4/97	Escambia	Atmore area	31	87.4	5	3.1	Felt in Brewton and Flomaton
10/24/97	Escambia	Little Rock	31.2	87.3	shallow	4.9	Close to epicenter of 5/4/97 quake. Within 10 miles (16 km) of Jay, FL
10/26/97	Escambia	Little Rock	31.1	87.3	10	3.7	Within 10 miles (16 km) of Jay, FL

Date	County (Alabama)	Epicenter near (Alabama)	Lat	Long	Depth (in KM)	Magnitude (M) (Richter)	Felt At or Located At
10/28/97	Escambia	Little Rock	31.1	87.3	10	3.0	Within 10 miles (16 km) of Jay, FL
1/26/98	Escambia	Little Rock	31.18	87.61	4	2.8	21 km N Atmore, felt 3 mi S of Little Rock
9/5/00	Monroe	Monroeville	31.51	87.31	7	2.5	Monroeville
9/5/00	Clarke	Fulton	31.79	87.84	5	2.4	10 km (6 mi) west of Fulton
9/29/03	Escambia	Little Rock	31.12	87.52	5	3.3	10 km NNW of Atmore Within 10 miles (16 km) of Jay, FL

Table 7: History of Seismic Activity Within 75 Miles of Santa Rosa County, FL 1929 - 2003Source: Modified from U.S. Geological Survey National Earthquake Information Center, Preliminary Determination of Epicenters; Virginia Polytechnic Institute and State University, Southeastern U.S Seismic Network Bulletin, 1981-1995; and Earthquakes in the Alabama Area (1994). Modified for LMS planning purposes by W. Fla. Regional Planning Council. Copied from <http://www.gsa.state.al.us/gsa/EQ2/eqtable.html>.

### Richter Scale Reference

Magnitude (M)	Effects
1 to 3	Recorded on local seismographs, but generally not felt
3 to 4	Often felt, no damage
5	Felt widely, slight damage near epicenter
6	Damage to poorly constructed buildings and other structures within 10's km
7	"Major" earthquake, causes serious damage up to ~100 km (recent Taiwan, Turkey, Kobe, Japan, and California earthquakes).
8	"Great" earthquake, great destruction, loss of life over several 100 km (1906 San Francisco)
9	Rare great earthquake, major damage over a large region over 1000 km (Chile 1960, Alaska 1964)

Table 8: Richter Scale Reference. Source: Canada Geological Survey 2003

The October 24, 1997 earthquake at Little Rock, Alabama (located 31.114° N. and 87.389° W. or about ten miles northwest of Jay, FL in Escambia County, AL) registered 4.9 on the Richter scale and provided Mercalli Intensity Scale ranges of III, IV, V and VI (See Figure 7). These ranges cause the effects as listed on Table 9 below.

The Little Rock 4.9M earthquake was widely reported by area media and felt by hundreds if not thousands of people. 911 centers were deluged with surprised residents in both Escambia (FL) and Santa Rosa Counties with reports of experiencing shaking, hearing a loud rumble or small explosion, or noticing pictures or household items shaking or rattling on shelves and counters. Because the earthquake happened in the early morning hours, the number of telephone calls to 911 centers would indicate it woke hundreds of people from their sleep. There was some property and vegetation damage reported near the epicenter in Alabama, including a crane and trees that slid into a sand pit and an incident where goods shook onto the floor in a convenience store near

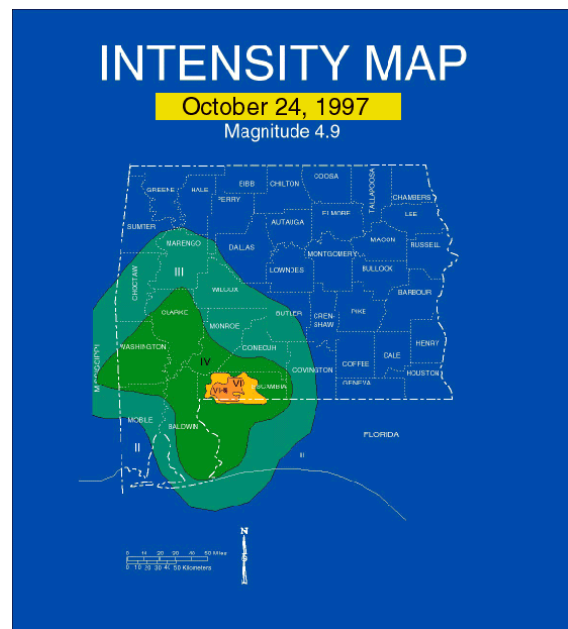


Figure 7 - Intensity map of the October 24, 1997 earthquake at Little Rock, Alabama. Note that Mercalli Intensity Scale ranges went from III to VI in Santa Rosa County. Source: Geological Survey of Alabama, 1999.

Barnett Crossroads at Exit 67 on I-65. (See <http://www.gsa.state.al.us/gsa/EQ2/EscambiaCo.html> for photos and descriptions of damage.)

Mercalli Intensity Scale Rating (partial listing)	Effects Noticed
I	Not felt. Marginal and long period effects of large earthquakes.
II	Felt by persons at rest, on upper floors, or favorably placed.
III	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV	Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing automobiles rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak.
V	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knick-knacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).

Table 9: Partial Listing of the Marcelli Earthquake Intensity Scale Rating System Source: Association of Bay Area Governments, California 2003.

The cause of the number of small tremors in the vicinity of Santa Rosa County is not fully understood by seismologists and geologists. It is known that a series of faults known as the “Pickens-Gilbertown-Flomaton Fault System” exist from near Meridian, Mississippi to the Luann Salt Formation approximately 18,000 feet below the surface in the vicinity of Jay. Along this fault line are a number of petroleum producing areas, including the Little Escambia Creek oilfield in north Santa Rosa County near Jay. (Source: Cooley, Julian C., P.G., Geologist, Santa Rosa County Public Works.) Most of



the tremors in the area are originating at a depth, or focus, of 3 miles (5 km). Some individuals have pointed to the possibility that oil extraction processes in the area may be causing the increasing number of earthquakes, but this has not been proven or acknowledged by the oil industry.

Seismologists do collectively agree the 1.5%g peak acceleration rate for earthquake hazard is at a level of very minimal risk. This means there is roughly a 1.5% chance in fifty years of the ground experiencing a horizontal shaking.

Since there is no history of damaging earthquakes in the county, the peak acceleration rate is determined to be low by the U.S. Geological Survey, and recent events near Santa Rosa County provide a reference that building damage will not occur from the area's seismic activity, no further analysis or risk assessment will be conducted for this plan (See Figure 8). Mitigation activities will not be considered in this plan at this time. However, continued or more frequent seismic activity, or an increase in intensity in the area may warrant possible examination of mitigation activities that may need to occur, especially near Jay and in northern Santa Rosa County.

## 2. Avalanche

Santa Rosa County does not have topography nor snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan.

## 3. Land Subsidence

No land subsidence has been documented in Santa Rosa County. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan.

## 4. Landslide

According to the U.S. Geological Survey Geologic Hazards (Open-File Report 97-289 by Godt) program, Santa Rosa County shares a large area of the Gulf Coastal Plain where less than 1.5% of area is susceptible to landslide. Although some portions of the county are "hilly" by coastal plain standards, there are no documented cases of a landslide occurring in the county (researched back to the 1940's). Landslide is therefore considered to be a minimal risk to the county and no further analysis or risk assessment will be conducted for this plan.

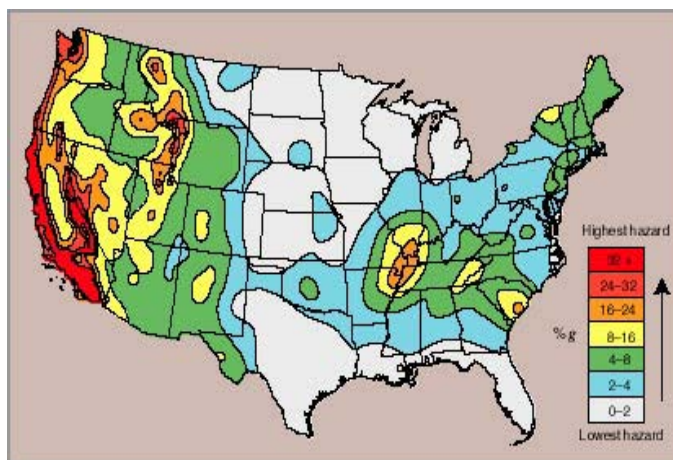


Figure 8: Earthquake frequency in Santa Rosa County is considered to be at less than 2%g, or very minimal. Source: U.S. Geological Survey national Seismic Hazard Mapping Project.

## **5. Tsunami**

Santa Rosa County is not considered to be in an area subject to tsunamis, according to the U.S. Geological Survey. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan.

## **6. Volcano**

There are no geological features in or near Santa Rosa County or the Southeast related to volcanism. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan.

### **4.3 Summary**

It must be emphasized that the fundamental reason for undertaking the hazard identification is to highlight vulnerabilities that need to be addressed by the development of mitigation initiatives for incorporation into the Santa Rosa County LMS Plan. Because of the numerous facilities, systems and neighborhoods in Santa Rosa County that need be assessed for their vulnerability to disasters, this planning process can be expected to continue in the future. Specific community vulnerabilities shall be assessed in the following Section 5.

**Santa Rosa County**  
**Local Mitigation Strategy (LMS) Plan**  
**Section Five**  
**Vulnerability Assessment**

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**5.1 Introduction**

*(Appendix 4.2 provides broad statistical information – from state contractor sources -- that supports discussion throughout Section 5. Additional statistical information – usually derived from local sources -- is located within this section and is provided mostly as tables.)*

This section of the Santa Rosa County LMS details the specific structures and facilities within the county vulnerable to the hazards as listed in Section Four. The hazards identified as likely to be present or occur included:

- Hurricane/Tropical Storm
- Flooding
  - General Flooding
  - Dam Safety
- Land Erosion
  - Expansive Soils
  - Highly Erosive Soils
- Severe Storms
  - Tornado & Waterspout
  - Thunderstorms and Lightning
  - Winter Storms
  - Heat Wave and Drought
- Wildfire

In order to streamline the analysis, each municipality will be examined individually by sectors followed by a comprehensive analysis of the entire county to account for mitigation in the unincorporated county areas.

Vulnerability is assessed from a broad perspective in the text. Specific vulnerability of structures, infrastructure, or other items that may deserve mitigation consideration is provided through a data system provided by the State of Florida *(See Appendix 4.2 for a combined section of mapped hazards and potential for damages in for each category)*. Additionally, LMS Committee staff has developed a number of tables based upon local data that assesses the financial/property value of potential damages. This documentation is included in each subsection of this chapter, as appropriate and available.

The facilities targeted in this section were identified through a thorough, comprehensive public involvement process initiated by the LMS Task Force. These facilities were then prioritized and ranked by the Task Force according to function and immediate need for mitigation. Where data and information was available, Geographic Information System (GIS) analysis is incorporated in identifying vulnerable facilities in relation to hazard areas. The result will be the identification and mapping of all facilities in the County. In addition, the analysis in this section will lead to the creation of specific policies, recommendations, and strategies to address the mitigation deficiencies in Section Six. Section Six will also identify the desired scheduling of the future planning efforts of the Task Force as well as the desired schedule for implementation of proposed mitigation initiatives by the participating jurisdictions and organizations.

Note that development trends throughout the County tend to favor the Fairpoint Peninsula, Navarre Beach, and the Pace and Milton areas. Municipalities have reflected very slow growth due to buildout or rural location of the communities. Growth of the City of Milton is primarily due to annexation of new vacant lands under development.

## **5.2 City of Gulf Breeze**

### **5.2.A *Community Mitigation Overview***

*(See Appendix 5.2.A for map series)*

The City of Gulf Breeze is vulnerable to the following types of natural disasters:

- Hurricane/Tropical Storm
- Flooding
  - General Flooding
  - Storm Surge
- Land Erosion
- Severe Storms
  - Tornado & Waterspout
  - Thunderstorms and Lightning
  - Winter Storms
  - Heat Wave and Drought
- Wildfire

A U.S. Geological Survey map of the City is shown as Map 5-1 at the end of this chapter of the plan.

The City of Gulf Breeze is Santa Rosa County's largest coastal urban area with a total population of 5,665 according to Census 2000. There are approximately 2,681 parcels of land in Gulf Breeze that have a "Just Value" of roughly \$742,648,556.

The City of Gulf Breeze is at the western terminus of the Fairpoint Peninsula. This peninsula is approximately one mile from the Gulf of Mexico and is separated from the

Gulf by Santa Rosa Island (a coastal barrier island) and the unincorporated community of Pensacola Beach in Escambia County. To the south of Gulf Breeze between Santa Rosa Island and the peninsula lies Santa Rosa Sound, a salt-water body. To the west and north of the City and peninsula is Pensacola Bay. The City of Pensacola in Escambia County lies three miles north of Gulf Breeze. East of Gulf Breeze is additional land area of unincorporated Santa Rosa County.

About one half of the City is within the Naval Live Oaks Unit of Gulf Islands National Seashore (owned by the National Park Service). This property includes the entire eastern portions of the City. This property consists of pine and live oak and includes some forested wetlands. With the exception of the National Park Service's headquarters and visitor center, along with a group camping area, only recreational trails and picnicking areas are located in this area. U.S. Highway 98 (Gulf Breeze Parkway) traverses the Naval Live Oaks property. The history of disaster damage is low in this area due to the absence of infrastructure. It is possible, however, to have hurricane storm surge cover U.S. 98 in category 3-5 storms. Additionally, wildfire can be an issue, especially when fire approaches neighborhoods and businesses that are built against the boundaries of the park on its east and west sides. (Controlled burns are made by trained personnel to mitigate fire risk.)

The remainder of Gulf Breeze is extensively developed with residential, commercial, institutional (government, schools and hospital), and some light industrial development. Flooding is a concern near Deer Point, along CR 399 near the Bob Sikes Bridge, at businesses along U.S. 98 at the southern entrance/end of the "Three Mile Bridge" crossing to Pensacola, and at some homes that line the shoreline around much of the Fairpoint Peninsula. Wind damage from hurricanes can potentially be extremely high due to the City's position on the coast. Wildfire could be a threat on some vacant lots, however Gulf Breeze is essentially "built out" and few vacant wooded lots remain.

Natural disaster history generally includes hurricane (storm surge, flooding and wind) and wildfire. Additional hazards could include tornado/waterspout, thunderstorms (lightning, flash flooding on some streets), drought (although water is piped in from northern Santa Rosa County), and a very rare chance of ice storm. All of these vulnerabilities are analyzed further below.

For the purposes of this study, "Just Value" is used for estimating monetary damage due to flood hazards. According to the Santa Rosa County Property Appraisers Office, Just Value is the value established by the Property Appraiser for *ad valorem purposes* and includes both the structural and land value. Under Florida Law, Just Value has been the term coined for representing Fair Market Value.

Based upon GIS analysis, there are eight identified critical facilities in the City of Gulf Breeze. All facilities are vulnerable to hurricane force winds due to sheer geographical location to the sea and have been recorded as such below. However, when examining the remaining hazard categories, four facilities are spatially located in some other form of hazard area, thus making it vulnerable to damage due to other hazard events. This

information was obtained by overlaying GIS hazard layers onto point locations of critical facilities. A summary of Gulf Breeze’s vulnerability by specific hazards is given below:

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
Gulf Breeze Water Treatment Plant	Hazmat	X		X		
BellSouth Central Office (Gulf Breeze)	Hazmat	X				
Gulf Breeze Hospital	Hospital	X				
Pier	Marine Facility	X		X		
Gulf Breeze Police Department	Police Dept.	X		X		
Gulf Breeze Elementary	School	X			X	
Gulf Breeze Middle School	School	X				
Gulf Breeze High	School	X			X	

As stated above, all facilities are deemed to be vulnerable to hurricane force winds. A more detailed explanation as to the level of vulnerability is given in section 5.2.B. Being that Gulf Breeze rests on a peninsula, all structures are sitting on the forefront of any hurricane event.

Interestingly, no structures were deemed to be vulnerable to flood events. This type of flooding is not inclusive of storm surge. This will be analyzed further in the next narrative.

Three structures are vulnerable to storm surge activity. Specifically, The Pier (marine facility) is vulnerable to all categories of surge. The Gulf Breeze Wastewater Treatment Plant (hazmat) is vulnerable to both Category Four and Five surge events. The Gulf Breeze Police Department (police department) is vulnerable to a Category Five event.

The wildfire classification is further delineated into three sub-classes. These classes include High, Medium, and Low potential for wildfire as defined by the US Forest Service. For the purposes of this analysis only those facilities vulnerable to “High” potential were included in the table above as this category calls for the most urgent mitigation measures.

The tri-color prioritization scheme was applied using GIS software to determine general areas or parcels in Gulf Breeze that require varying levels of mitigation. The results of the analysis are detailed in the table below:

Priority	Number of Parcels
Red (High)	1
Yellow (Medium)	59
Blue (Low)	2,621

### **5.2.B Hurricane**

For the purposes of this section, high wind vulnerability shall be the component analyzed. Flooding and surge events associated with hurricanes are analyzed separately further in this document. Since flooding and surge are covered in detail (Section 5.2.C. and 5.2.D.), the only remaining variable in a hurricane event that needs to be examined are high winds and the community's vulnerability to them.

Data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System). This system is an experimental web based system that allows emergency managers to easily access a variety of hazard related data. The following *draft* outputs was created by Kinetic Analysis Corporation (KAC) under contract with the Florida Department of Community Affairs.

Historical storms (past 153 years for tropical cyclones and past 50 years) were simulated using the TAOS model, version 10.2. Winds were computed and hazard zones created based upon these simulations. Wind layers were created based on percent damage expected. Additionally, FEMA Flood Insurance Rate Map (FIRM) data was ingested, and the tabular data sets were run for comparison. (<http://stellarcom.methaz.org/lmsmaps/methodqr.html>, 2004).

It should also be noted that this TAOS wind data covers the entire county and is not jurisdiction specific. Due to the wide breadth of area this data covers, more detailed information (for example, dollars values) shall be covered in the "Unincorporated Santa Rosa County" section below since this section also covers the entire county.

This section shall outline wind speed vulnerability for the city. A summary of the wind velocity vulnerabilities for the City of Gulf Breeze is summarized in the table below:

Category Event	Gulf Breeze Vulnerability (mph)	Event	Gulf Breeze Vulnerability (mph)
Category 1 (74-95 mph)	75-85	10 Year MLE Wind	50-75
Category 2 (96-100 mph)	95-115	25 Year MLE Wind	50-85
Category 3 (111-130 mph)	115-130	50 Year MLE Wind	50-95

Category 4 (131-155 mph)	130-160	100 Year MLE Wind	95-115
Category 5 (155+ mph)	>160		

Source: TAOS model data; 2004, <http://www.methaz.org/lmsmaps/>

The overwhelming majority of structures in Gulf Breeze do not have hurricane shutters. Additionally, they have not been built to recent Florida Building Code standards passed in the early 2000's. (Most structures in Gulf Breeze were built before this code was enacted.) Most structures are constructed to the Southern Building Code standards that were in place prior to the 2000's.

Window, door and roof failure are the primary vulnerability points to most structures. Tree damage and subsequent debris are another aspect of vulnerability. It is anticipated downed trees and branches will cause structural damage, uprooted of utility lines (water, sewer, gas, telephone, cable TV, etc.), and damage to overhead electrical and communications wiring. Debris on roadways will block access to and from emergency services. Additionally, evacuees from other coastal locations may be impacted by debris on roadways. Wind driven debris may damage uncovered windows, making structures vulnerable to interior wind and rain damage.

Gulf Breeze is also vulnerable to the human impacts of hurricane disasters relating to evacuation. U.S. 98 (Gulf Breeze Parkway leading to Pensacola or Navarre) and SR 399 (Pensacola Beach Boulevard and the Bob Sikes Bridge to Pensacola Beach) are the *only* routes of evacuation in the immediate area for some 45,000 residents of Gulf Breeze, unincorporated Santa Rosa County, and the City of Gulf Breeze (not including tourists/visitors). Evacuation orders issues by Escambia County for locations on neighboring Pensacola Beach (located in Escambia County) must be coordinated with Santa Rosa County Emergency Management and the City of Gulf Breeze to ensure traffic flow away from vulnerable beach areas. Daily traffic counts indicate an average daily flow of 50,000 vehicles per day in non-emergency situations on U.S. 98 through Gulf Breeze. The Garcon Point Bridge (SR 281) about seven miles east of Gulf Breeze does alleviate some traffic pressures on the City during evacuation situations. Growth of the Fairpoint Peninsula and on Pensacola Beach, however, places a great deal of pressure on the U.S. 98 route. The Pensacola Area Transportation Planning Organization is considering replacing the aging Pensacola Bay Bridge (U.S. 98 between Gulf Breeze and Pensacola) (likely between 2009 and 2014). Additionally, a new bridge corridor is being considered that would run from Pensacola, across Pensacola Bay, to east of Gulf Breeze. There is no funding and no firmly established route for this bridge at this time, however.

Issues include traffic management and flow, services needed by a temporary increase in population, and emergency services (accidents, medical emergencies, etc.).

### ***5.2.C Flood***

The City of Gulf Breeze has extensive coverage of floodplains, primarily related to proximity to coastal waters and shorelines. In some cases, freshwater wetlands or affiliated low areas create such floodplains. It should be noted storm surge zones



(discussed in Section 5.2.D) do not necessarily include all floodplains delineated on National Flood Insurance Program (NFIP) maps. Additionally, the City of Gulf Breeze may record information on flood-prone locations (often due to urban runoff) that may not appear on NFIP or storm surge maps. Users of this document are cautioned to ascertain *all* information regarding potential flood-prone areas.

NFIP maps indicate “V” (velocity) zones along many coastal areas of the City. “V” zones extend from the western tip of Fairpoint southeast to Deer Point, and eastward along Santa Rosa Sound to the city limits in the Naval Live Oaks Area of Gulf Islands National Seashore. All “V” zones are located within immediate proximity to Pensacola Bay or Santa Rosa Sound. About one third of the “V” zones lie in the National Seashore area boundary. No “V” zones extend east from Fairpoint along the northern shore of the City along Pensacola Bay.

“A” zones extend around all coastal perimeter areas. These are inland from all “V” zones. Most land south of Shoreline drive (an east-west local corridor within the City) is within an “A” zone. This includes most of Deer Point. On the north shore of the City, Town Point and several bayou shorelines are also within the “A” zone.

“B” zones encompass minor areas of the City. Most notable is a “B” zone at the terminus of the Pensacola Bay Bridge (U.S. 98) on the north shore of the City.

Using digital Q3 flood data in a GIS application, 100- and 500-year flood zones were overlaid on tax parcels to determine extent of potential damage. The City of Gulf Breeze has four primary flood zone types that lie within its borders. They include:

Zone Type	Zone Definition
X	An area that is determined to be outside the 100- and 500-year flood plains.
X500	An area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage area less than 1 square mile; or an area protected by levees from 100-year flooding.
VE	An area inundated by 100-year flooding with velocity hazard (wave action); BFE’s have been determined.
AE	An area inundated by 100-year flooding, for which BFE’s have been determined.

Note: Zone “X” on Q3 maps generally correlates with “Zone C” on Federal Flood Insurance Rate Maps (FIRM’s). Similarly, Zone “X500” on Q3’s generally correlates with FIRM Zone “B”.

For the purposes of this sub-section on Gulf Breeze, Zone “AE” and “VE” have been joined together in a broader “100-year flood” category to streamline data analysis.

According to the analysis results, there are 473 parcels of land within the 100-year flood zone in Gulf Breeze with a Just Value of \$480,003,660 or 64.6% of the Just Value of all of Gulf Breeze.

There are 7 identified parcels of land in Gulf Breeze that lie within the 500-year flood zone. These parcels have a Just Value of approximately \$1,482,615 or <1.0% of the Just

Value of all of Gulf Breeze. Flooding vulnerability for the City of Gulf Breeze is summarized in the following table:

Flood Type	Number of Parcels	Percentage Gulf Breeze Total Parcels	Just Value (Fair Market)	Percentage Gulf Breeze Total Just Value (Fair Market)
<b>100-Year</b>	473	17.6	\$480,003,660	64.6
<b>500-Year</b>	7	<1	\$1,482,615	<1
<b>TOTAL</b>	<b>480</b>	<b>17.7</b>	<b>\$481,486,275</b>	<b>64.7</b>

### 5.2.D Storm Surge

Although much of the areal coverage of Gulf Breeze is within a storm surge zone of hurricanes, only immediate coastal areas are most vulnerable. In most cases, Category 1 and Category 2 hurricane storm surge zones correlate well with NFIP flood zones “V”, “A” and “B”. Category 3 hurricane (the first stage of a major hurricane) storm surge begins to extend beyond the NFIP flood zone coverage, in most areas only 100 to 200 feet beyond NFIP map references. Once Category 4 and 5 (major) hurricane strength is reached, a more extensive coverage of the City occurs. Such coverage includes virtually all of the sparsely developed Naval Live Oaks Area of Gulf Islands National Seashore, and a substantial portion of the urbanized neighborhoods and some commercial locations in the developed portions of Gulf Breeze.

Gulf Breeze is highly prone to storm surge. There is a possibility that those deciding to not evacuate in a major hurricane being unable to leave the City from any direction due not to wind and debris, but to water. Essentially, the core of the City in and around U.S. 98 could become a temporary island until storm surge waters receded. People involved in a late evacuation and unable to leave the area due to bridge closure or inaccessibility would be faced with weathering a hurricane and storm surge inside of city limits. This creates a degree of concern for mitigation planning in terms of sheltering, building protection, and the ability to function as a City and community during the response and recovery phase of a hurricane/storm surge emergency.

Homes, businesses, and public infrastructure not otherwise mitigated for flooding (when compared to NFIP flood zone maps) could be inundated or otherwise impacted by storm surge blocks inland.

Using digital storm surge data from the United States Army Corps of Engineers in a GIS application, Category 1, 2, 3, 4, and 5 storm surge zones (Saffir/Simpson Scale) were overlaid on tax parcels to determine extent of potential damage. The City of Gulf Breeze

has all five primary storm surge categories that impact structures within its borders. They include:

Category Number	Category Definition
1	Winds 65 to 82 knots (75-95 mph); damage primarily to shrubbery, trees, foliage and unanchored mobile homes. No real damage to permanent building structures. Storm surge, four to five feet above mean water level. Low-lying coastal roads inundated, minor pier damage.
2	Winds 83 to 95 knots (96-110 mph); Considerable damage to shrubbery and tree foliage with some trees blown down. Major structural damage to exposed mobile homes. Some damage to roofing material, windows, and doors. No major damage to permanent building structures. Storm surge, six to eight feet above mean water level. Coastal roads and low-lying escape routes inland cut by rising water. Considerable pier damage and marinas flooded. Evacuation of some shoreline residences and low-lying island areas required.
3	Winds 96 to 113 knots (111-130 mph). Damage to shrubbery and trees. Foliage off trees, large trees blown down. Some roofing material damage; some window and door damage; some structural damage to small residences and utility buildings. Mobile homes destroyed. Minor amount of curtain wall failures. Storm surge, nine to twelve feet above mean water level. Serious flooding along coast with many smaller structures near coast destroyed. Larger structures damaged by battering of floating debris. Low-lying escape routes inland cut by rising water.
4	Winds 114 to 135 knots (131-155 mph). Shrubs and trees down. Extensive roofing material damage; extensive window and door damage. Complete failure of roof structures on many small residences and complete destruction of mobile homes. Storm surge, thirteen to eighteen feet above mean water level. Major damage to lower floors of structures near the shore due to flooding and battering action. Low-lying escape routes inland cut by rising water. Major erosion of beach areas.
5	Winds greater than 135 knots (155 mph); Shrubs and trees down. And roofing damage considerable. Very severe and extensive window and door damage. Complete failure of roof structures on many residences and industrial buildings; extensive glass failure; some complete building failures; small buildings overturned and blown over or away and complete destruction of mobile homes. Major power distribution failures causing loss of water and sewer for an extended period. Storm surge, greater than eighteen feet above mean water level. Major damage to lower floors of all structures. Low-lying escape routes inland cut by rising water. Evacuation of residential areas situated on low ground within five to ten miles of the shoreline may be required.

According to the analysis results, there are 153 parcels of land within the Category One storm surge zone in Gulf Breeze with a Just Value of \$60,044,968 or 8.1% of the Just Value of all of Gulf Breeze.

There are 305 identified parcels of land in Gulf Breeze that lie within the Category Two storm surge zone. These parcels have a Just Value of approximately \$104,490,327 or 14.1% of the Just Value of all of Gulf Breeze.

There are 403 identified parcels of land in Gulf Breeze that lie within the Category Three storm surge zone. These parcels have a Just Value of approximately \$167,811,259 or 22.6% of the Just Value of all of Gulf Breeze.

There are 990 identified parcels of land in Gulf Breeze that lie within the Category Four storm surge zone. These parcels have a Just Value of approximately \$305,019,063 or 41.1% of the Just Value of all of Gulf Breeze.

There are 1,499 identified parcels of land in Gulf Breeze that lie within the Category Five storm surge zone. These parcels have a Just Value of approximately \$459,070,461 or 61.8% of the Just Value of all of Gulf Breeze.

Storm surge vulnerability for the City of Gulf Breeze is summarized in the following table:

Category Storm Surge	Number of Parcels	Percentage Gulf Breeze Total Parcels	Just Value (Fair Market Value)	Percentage Gulf Breeze Total Just Value
<i>1</i>	153	5.7	\$60,044,968	8.1
<i>2</i>	305	11.4	\$104,490,327	14.1
<i>3</i>	403	15.0	\$167,811,259	22.6
<i>4</i>	990	36.9	\$305,019,063	41.1
<i>5</i>	1,499	55.9	\$459,070,461	61.8
<b><i>TOTAL<sup>1</sup></i></b>	<b>1,499</b>	<b>55.9</b>	<b>\$459,070,461</b>	<b>61.8</b>

### ***5.2.E Land Erosion***

The majority of the City of Gulf Breeze is located on “potentially highly erodable” soils, according to the Blackwater Soil and Water Conservation District. Small portions of the City are located on “highly erodable soils”. Most uplands are considered potentially highly erodable because of their proximity to topographic slopes associated with being close to coastal bluffs of the bay and sound. Highly erodable soils are usually associated directly with coastal bluffs and are immediately next to the bay or sound.

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<sup>1</sup> Category Five (5) storm surge amounts were used for the total because the boundaries of all other storm surge zones and applicable parcels are all spatially located within the Category Five. These totals represent the maximum damage foreseeable due to storm surge activity. This methodology was chosen to prevent overlap of data and skewing results.

Potentially highly erodable locations are often created by disturbing natural groundcover during development. Without stormwater controls, gullying could occur, particularly if water can develop velocity seeking lower ground or natural ravines/valleys. Silt fencing/screens at development sites reduce the amount of erosion migrating away from such sites.

Highly erodable soils can be seen in sandy bluffs along both Pensacola Bay and Santa Rosa Sound. Several of the bluffs are located on National Park Service properties and are part of the natural systems

### ***5.2.F Severe Storms***

A vulnerability to severe storms is present throughout Gulf Breeze. The risk assessment of this plan identifies tornadoes, waterspouts, severe thunderstorms, lightning, winter storms, heat and drought as possibilities in the area.

Vulnerability is simply through presence. All structures and infrastructure are vulnerable to severe weather in Gulf Breeze.

Tornadoes and waterspouts are virtually impossible to predict (in terms of exact location of formation and path), although technologies such as Doppler Radar are enabling weather forecasters to give accurate warnings during formation and identification of an event. Aside from strong building codes (generally developed around the premise of hurricane mitigation and protection), vulnerability to these events will always be present and difficult to mitigate against.

Thunderstorms and lightning damage can be prevented. Existing and strengthened building codes (usually under consideration to prevent hurricane damage) will provide strength against severe thunderstorm events (especially high winds and hail). Lightning damage is preventable when proper electrical grounding, following building and fire codes, will also prevent damage. Electronic equipment is highly vulnerable to lightning strikes. Good common sense and planning by those using such equipment can prevent or reduce damage due to lightning events.

Winter storm vulnerability is very low in Gulf Breeze. With warm waters surrounding the City, the likelihood of severe winter weather is incredibly low. The greatest vulnerabilities would be ice accumulation on bridges leading into and out of the City, ice on electrical lines, and loss of electricity. All residents, business and governmental organizations would be vulnerable. Severe cold can also cause strains on the electrical generation system (provided by Gulf Power Company). Loss of electrical power due to high demand could cause problems for vulnerable populations (especially the elderly).

Similarly, heat waves may cause excessive demand on electrical systems. Air conditioning is a given for most residents. Loss of the ability to cool air in a heat wave could mean the possibilities of opening shelters for vulnerable populations. Although

all residents and businesses are vulnerable to heat waves, air conditioning generally mitigates the issue.

Drought can cause water use restrictions, but does not mean that water is unavailable in the area. Water is delivered to Gulf Breeze from inland well systems. Drought can lead to firefighting difficulties (analyzed under wildfire vulnerability assessments).

In all cases, loss of commercial grid electricity is the primary vulnerability for the area. Without a source of electricity, cooling, heating, communications and water supplies cannot be assured.

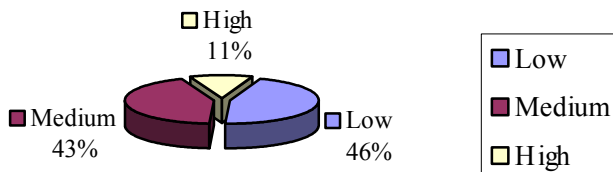
### 5.2.G Wildfire

About one half of the acreage of the City of Gulf Breeze is woodland. The other half is heavily urbanized with housing, commercial development, and public infrastructure. Most of the developed portions of the City have been built on sandy ridges that once contained a sand pine and longleaf pine forest. Such pine forests have fire-dependant ecologies. This means fire is a natural part of the life cycle.

Development of or near such forests has created some environs that are conducive to wildfire spread within urbanized areas. Particularly vulnerable are buildings, subdivisions, and other development where pine needles are allowed to accumulate on roofs and in yards. Flammable shrubbery close to buildings (usually containing waxy leaves or flammable sap in stems add to the problem. Continual canopies of flammable trees, like pines, can lead to crown fires. Finally, proximity to extensive woodland areas or vacant lots can allow fire to spread into urbanized areas or at least to urban boundaries.

Of particular concern in Gulf Breeze is the interface between the urbanized areas of the City and the western boundary of the Naval Live Oaks Area of Gulf Islands National Seashore. This area also threatens those living outside of the City along the eastern boundary of both the National Park Service lands and the City limits (the boundaries are the same). (To a lesser extent, vacant wooded properties in other locations of the City may be of similar concern, but not to the magnitude of the interface with the National Park Service lands.) Along this boundary, neighborhoods and commercial development directly abut pine forests and other woodland areas. This urban/rural interface has been of concern to the Florida Division of Forestry, the Gulf Breeze Fire Department, and the National Park Service. Lightning, arson, smoking, catalytic converters, or other sources could cause a fire in these areas. This would create a serious fire emergency for structures and property near the

**City of Gulf Breeze: Percent Land Area with Wildfire Potential**



**Figure 1: Wildfire Potential in Gulf Breeze. Source: [www.mangaz.com/lmsmaps](http://www.mangaz.com/lmsmaps)**

interface.

To reduce fire danger, prescribed burns have been introduced. This reduces fuel buildup on National Park Service property. The likelihood of an uncontrolled fire is greatly reduced when this practice is maintained.

With controlled burning enacted, attention turns to vulnerability of homes and businesses near this interface. Mitigation activities can include public outreach to those near the interface. Decisions would need to be made by private property owners concerning yard landscaping and pine needle removal in yards and on roofs.

The City of Gulf Breeze is vulnerable to approximately \$742,646,356 (Just Value) in damages due to any wildfire event. Similar to the hurricane data provided above, the data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System); an experimental web based system that allows emergency managers to easily access a variety of hazard related data.

The wildfire potential data was created by reclassifying land cover data sets created for hydrologic models. These data sets were reclassified to equate the Anderson Level II classification to fuel models used in the National Fire Danger Rating System. These fuel models are an indication of the ability of a fire to start and spread in the given terrain type, and are used as the input to the Fire Potential Index as well as fire spreading models. The resulting data was compared with the NFDR Fuel Model Map created by the US Forest Service (USFS). The NFDR Fuel Model Map is used for the next generation fire danger rating system being developed by USFS, and is a nationwide map at a resolution of 1000 meters per grid cell based on data from 1997. The KAC developed data for Florida is at a resolution of 90 meters, and compares well the much more general national map while providing a great deal of additional detail, as well as being more up to date due to land cover changes.

Each of the fuel models was assigned to a risk code of “low”, “medium”, or “high”, based on fire spreading potential during a climatologically “dry” year, and processed with the statewide parcel data base to create the tables supplied with the LMS analysis. The mode of the fuel types within 500 meters of the parcel was used to determine risk category for the parcel (Kinetic Analysis Corporation <http://stellarcom.methaz.org/lmsmaps/methodqr.html>.)

For the purposes of this study, the GIS data depicting wildfire vulnerability were overlaid upon tax parcels whereby values for damage could be assessed. The result of the analysis indicates eleven percent of the land area in Gulf breeze is vulnerable to high potential for wildfire (See Figure 1). Forty five percent is considered to be of low potential, forty three percent of medium, and eleven percent considered high potential.

### ***5.2.H Other Hazards***

As identified in Section Four, there are a number of other hazards that affect Santa Rosa County. However, the direct impacts of these hazards in relation to mitigation applications is somewhat negligible, but worth mentioning. These hazards are covered comprehensively for Santa Rosa County below in the section “Unincorporated Santa Rosa County”. It should also be noted that this analysis covers both incorporated and unincorporated areas due to the broad geographical area the base data covers.

### **5.3 Town of Jay**

#### **5.3.A *Community Mitigation Overview***

*(See Appendix 5.3.A. map series)*

The Town of Jay is vulnerable to the following types of natural disasters:

- Hurricane/Tropical Storm
- Flooding
  - General Flooding
- Severe Storms
  - Tornado & Waterspout
  - Thunderstorms and Lightning
  - Winter Storms
  - Heat Wave and Drought
- Wildfire

The Town of Jay is Santa Rosa County’s smallest incorporated urban area with a total population of 579 according to Census 2000. This community lies in the northern portion of the county and experiences only small pockets of localized flooding. There are approximately 504 parcels of land in Jay that have a “Just Value” of roughly \$27,276,154.

The Town of Jay is located in the northwestern corner of Santa Rosa County. The Town consists of a small but active central business district, residential areas, schools, hospital, town hall, parks, community center, fire department, library, and a number of agricultural support industries and outlets, including farm supply stores, a livestock auction market and two cotton gins. Much of the Town’s land is in agricultural production, and the Town is surrounded by thousands of acres of land planted in cotton, soybean, and peanut production, and to some extent silvicultural/timber operations.

Jay also supports a number of active oil wells. Oil is shipped by a series of pipelines to the St. Regis separation facility of Exxon-Mobil, located northwest of Jay. These wells are pressurized (meaning oil is being forced out of the ground by natural and man-made forces rather than being “pumped” out of the ground). Additional exploratory wells have been drilled recently. The life of the oil field under Jay is not expected to last beyond five to ten years.



Natural disaster history generally includes hurricane (from high winds). Flooding can occur in small areas, usually caused by excessive rainfall and not from rising water of river floodplains. A few homes are affected by flooding, and some roadways are vulnerable to localized flooding events due to level terrain and drainage issues. Additional hazards could include tornado, thunderstorms (lightning, flash flooding on some streets), drought, and a rare chance of ice storm or snow. Hurricane, thunderstorm, and other high wind events cause the most extensive damage, with lightning the second most frequent natural disaster event.

For the purposes of this study, “Just Value” is used for estimating monetary damage due to flood hazards. According to the Santa Rosa County Property Appraisers Office, Just Value is the value established by the Property Appraiser *for ad valorem purposes* and includes both the structural and land value. Under Florida Law, Just Value has been the term coined for representing Fair Market Value

Based upon GIS analysis, there are 7 identified critical facilities in the Town of Jay. All facilities are vulnerable to hurricane force winds due to sheer geographical location to the Gulf of Mexico and have been recorded as such below. None of the facilities are spatially located in any other form of hazard area, thus making it vulnerable to no other damage due to hazard events. This information was obtained by overlaying GIS hazard layers onto point locations of critical facilities. A summary of Jay’s vulnerability by specific hazards is given below:

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
Jay (Town) Fire Department Building	Fire Dept.	X				
Jay Calfee Water Well	Hazmat/Utilities	X				
Jay Elementary School	School	X				
Jay High School	School	X				
Jay Hospital	Hospital	X				
Jay Peanut Farmers Co-Op Inc	Hazmat	X				
Jay School Water Well	Hazmat/Utilities	X				
Jay Wastewater System Lift Stations	Utilities	X	X			X
Jay Wastewater Treatment Plant	Hazmat/Utilities	X				
Santa Rosa County Sheriff’s	Police Dept	X				

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
Office District 5						

As stated above, all facilities are deemed to be vulnerable to hurricane force winds. A more detailed explanation as to the level of vulnerability is given in section 5.3.B. Being that Jay rests in the far northern area of the county, all structures are less vulnerable to hurricane winds when compared to it's coastal neighbors. Interestingly, no structures were deemed to be vulnerable to flood events or storm surge activity.

The wildfire classification is further delineated into three sub-classes. These classes include High, Medium, and Low potential for wildfire as defined by the US Forest Service. For the purposes of this analysis only those facilities vulnerable to "High" potential were included in the table above as this category calls for the most urgent mitigation measures. The Town of Jay has no critical facilities located in the "High" category.

The tri-color prioritization scheme was applied using GIS software to determine general areas or parcels in Jay that require varying levels of mitigation. The results of the analysis are detailed in the table below:

Priority	Number of Parcels
Red (High)	0
Yellow (Medium)	28
Blue (Low)	551

### 5.3.B Hurricane

For the purposes of this section, high wind vulnerability shall be the component analyzed. Flooding and surge events associated with hurricanes are analyzed separately further in this document. Since flooding and surge are covered in detail, the only remaining variable in a hurricane event that needs to be examined are high winds and the community's vulnerability to them.

Data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System). This system is an experimental web based system that allows emergency managers to easily access a variety of hazard related data. The following *draft* outputs were created by Kinetic Analysis Corporation under contract with the Florida Department of Community Affairs.

Historical storms (past 153 years for tropical cyclones and past 50 years) were simulated using the TAOS model, version 10.2. Winds were computed and hazard zones created based upon these simulations. Wind layers were created based on percent damage expected. Additionally, FEMA Flood Insurance Rate Map (FIRM) data was ingested,

and the tabular data sets were run for comparison. (<http://stellarcom.methaz.org/lmsmaps/methodqr.html>, 2004).

It should also be noted that this TAOS wind data covers the entire county and is not jurisdiction specific. Due to the wide breadth of area this data covers, more detailed information (for example, dollars values) shall be covered in the “Unincorporated Santa Rosa County” section below since this section also covers the entire county.

This section shall outline wind speed vulnerability for the town. A summary of the wind velocity vulnerabilities for the Town of Jay is summarized in the table below:

Category Event	Jay Vulnerability (mph)	Event	Jay Vulnerability (mph)
Category 1 (74-95 mph)	50-75	10 Year MLE Wind	30-49
Category 2 (96-100 mph)	75-85	25 Year MLE Wind	50-75
Category 3 (111-130 mph)	85-95	50 Year MLE Wind	50-85
Category 4 (131-155 mph)	95-115	100 Year MLE Wind	75-95
Category 5 (155+ mph)	131-160		

Source: TAOS model data; 2004, <http://www.methaz.org/lmsmaps/>

### 5.3.C Flood

Using digital Q3 flood data in a GIS application, 100- and 500-year flood zones were overlaid on tax parcels to determine extent of potential damage. The Town of Jay has two primary flood zone types that lie within its borders. They include:

Zone Type	Zone Definition
X	An area that is determined to be outside the 100- and 500-year flood plains.
IN	An area designated as within a “Special Flood Hazard Area” (or SFHA) on a FIRM. This is an area inundated by 100-year flooding for which BFE’s or velocity may have been determined. No distinctions are made between the different flood hazard zones that may be included within the SFHA. These may include Zones A, AE, AO, AH, A99, AR, V, or VE.

Note: Zone “X” on Q3 maps generally correlates with “Zone C” on Federal Flood Insurance Rate Maps (FIRM’s).

For the purposes of this sub-section on Jay, Zone “IN” has been classified into a broader “100-year flood” cohort to streamline data analysis.

According to the analysis results, there are 34 parcels of land within the 100-year flood zone in Jay with a Just Value of \$2,204,017 or 8.0% of the Just Value of all of Jay.

Flooding vulnerability for the Town of Jay is summarized in the following table:

Flood	Number	Percentage	Just Value	Percentage
-------	--------	------------	------------	------------

Type	of Parcels	Jay Total Parcels	(Fair Market	Jay Total Just Value (Fair Market)
<b>100- Year</b>	34	6.7	\$2,204,017	8.0
<b>TOTAL</b>	<b>34</b>	<b>6.7</b>	<b>\$2,204,017</b>	<b>8.0</b>

### 5.2.D Severe Storms

A vulnerability to severe storms is present throughout Jay. The risk assessment of this plan identifies tornadoes, waterspouts, severe thunderstorms, lightning, winter storms, heat and drought as possibilities in the area.

Vulnerability is simply through presence. All structures and infrastructure are vulnerable to severe weather in Jay.

Tornadoes are virtually impossible to predict (in terms of exact location of formation and path), although technologies such as Doppler Radar are enabling weather forecasters to give accurate warnings during formation and identification of an event. Aside from strong building codes (generally developed around the premise of hurricane mitigation and protection), vulnerability to these events will always be present and difficult to mitigate against.

Thunderstorms and lightning damage can be prevented. Existing and strengthened building codes (usually under consideration to prevent hurricane damage) will provide strength against severe thunderstorm events (especially high winds and hail). Lightning damage is preventable when proper electrical grounding, following building and fire codes, will also prevent damage. Electronic equipment is highly vulnerable to lightning strikes. Good common sense and planning by those using such equipment can prevent or reduce damage due to lightning events.

Winter storm vulnerability is probably higher in Jay than in any other municipality in Santa Rosa County. This is due to its inland location about 40 miles north of the Gulf of Mexico. Still, the greatest vulnerabilities would be ice accumulation on bridges leading into and out of the Town, ice on electrical lines, and loss of electricity. All residents, business and governmental organizations would be vulnerable. Severe cold can also cause strains on the electrical generation system (provided by Gulf Power Company and Escambia River Electric Cooperative). Loss of electrical power due to high demand could cause problems for vulnerable populations (especially the elderly).

Similarly, heat waves may cause excessive demand on electrical systems. Air conditioning is a given for most residents. Loss of the ability to cool air in a heat wave could mean the possibilities of opening shelters for vulnerable populations. Although

all residents and businesses are vulnerable to heat waves, air conditioning generally mitigates the issue.

Drought can cause water use restrictions, but does not mean that water is unavailable in the area. Water is delivered via ground water well systems from an aquifer with abundant water resources. Drought can lead to firefighting difficulties (analyzed under wildfire vulnerability assessments).

In all cases, loss of commercial grid electricity is the primary vulnerability for the area. Without a source of electricity, cooling, heating, communications and water supplies cannot be assured.

### 5.3.E Wildfire

The Town of Jay is vulnerable to approximately \$27,276,154 (Just Value) in damages due to any wildfire event. Similar to the hurricane data provided above, the data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System); an experimental web based system that allows emergency managers to easily access a variety of hazard related data.

Using the same data source from the analysis on Gulf Breeze from the Kinetic Analysis Corporation, GIS data depicting wildfire vulnerability were overlaid upon tax parcels whereby values for damage could be assessed. The result of the analysis indicates eighty six percent of the land area in Jay is vulnerable to low potential for wildfire (See Figure 2). Eighty six percent is considered to be of low potential, six percent of medium, and eight percent considered high potential.

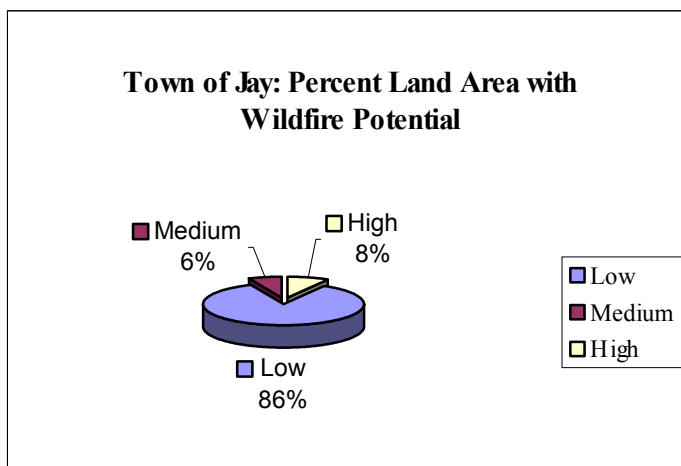


Figure 2: Wildfire Potential in Jay. Source: [www.mangaz.com/lmsmaps](http://www.mangaz.com/lmsmaps)

### 5.3.F Other Hazards

As identified in Chapter Four, there are a number of other hazards that affect Santa Rosa County. However, the direct impacts of these hazards in relation to mitigation applications is somewhat negligible, but worth mentioning. These hazards are covered comprehensively for Santa Rosa County below in the section "Unincorporated Santa Rosa County". It should also be noted that this analysis covers both incorporated and unincorporated areas due to the broad geographical area the base data covers.

## 5.4 City of Milton

### 5.4.A *Community Mitigation Overview*

*(See Appendix 5.4.A. map series)*

The City of Milton is vulnerable to the following types of natural disasters:

- Hurricane/Tropical Storm
- Flooding
  - General Flooding
  - Dam Safety
- Land Erosion
  - Highly Erosive Soils
- Severe Storms
  - Tornado & Waterspout
  - Thunderstorms and Lightning
  - Winter Storms
  - Heat Wave and Drought
- Wildfire

The City of Milton is Santa Rosa County's largest urban area and the County seat with a total population of 7,045 according to Census 2000. There are approximately 4,225 parcels of land in Milton that have a "Just Value" of roughly \$375,453,998.

The City of Milton is located in the middle of Santa Rosa County. The City serves as the commercial and governmental center of the County. Extensive residential neighborhoods, commercial districts, a viable and historic downtown central business district, the county courthouse and administrative complex, hospital, schools, and light industries are found within the community.

Milton is located near the bottom of the Blackwater River watershed. The Blackwater enters from the north and east of the City, while a second creek (Pond Creek) terminates near Bagdad south of Milton. Smaller creeks (example: Collins Mill Creek) can also cause some flooding, especially when the Blackwater is at flood stage. An extensive floodplain exists in the City, including all of downtown and neighborhoods to the west of downtown, along the CSX railway, and along the river itself. The wastewater plant, the garage warehouse facility, and city fire department are in this floodplain. U.S. 90 (Caroline Street) and surrounding streets can become completely submerged, causing traffic to be rerouted south to Interstate 10 in such conditions. Such flooding can be caused by hurricanes/tropical systems (including surge backup from Blackwater Bay to the south), heavy and extended periods of rain within the Blackwater River watershed. Although lands have been purchased by the City to mitigate damages, an extensive amount of development remains (and likely *will* remain due to the commercial and historical nature of the area), and other mitigation activities aside from buyout will be necessary to ensure public and private property protection.

Hurricane force winds (whether from hurricanes or thunderstorms) have caused extensive damage to structures, infrastructure, and trees. Although inland, Milton can experience Category 5 wind speeds in rare instances. Few homes in Milton have hurricane shutters. Electrical service has been interrupted for days and perhaps weeks by such situations.

Milton experienced Florida's strongest tornado on record in 1972. Eight people died, and damage was extensive in one neighborhood. Other weather events, such as thunderstorms, can cause lightning damage. Ice and snow are a very rare but distinct possibility. Ice, in particular, may damage power lines and create hazardous driving conditions.

The City has also experienced wildfire threats, especially on its western and northeastern sides where extensive woodlands (mixed with residential neighborhoods in sand-hill fire-prone environments) exist. These areas extend into larger woodland complexes of silvicultural lands, making wildfire of particular interest in some neighborhoods on the urban/rural interface.

Natural disaster history can be summarized as being caused by flooding, hurricane, thunderstorms, and wildfire. Flooding and wind from hurricanes/Gulf storms are the greatest concerns, followed by wildfire. Additional hazards include tornado, thunderstorms (lightning, flash flooding on some streets), drought, and a rare chance of ice storm or snow. Hurricane, thunderstorm, and other high wind events cause the most extensive damage, with lightning the second most frequent natural disaster event.

For the purposes of this study, "Just Value" is used for estimating monetary damage due to flood hazards. According to the Santa Rosa County Property Appraisers Office, Just Value is the value established by the Property Appraiser for *ad valorem purposes* and includes both the structural and land value. Under Florida law, Just Value has been the term coined for representing Fair Market Value

Based upon GIS analysis, there are twenty identified critical facilities in the City of Milton. All facilities are vulnerable to hurricane force winds due to sheer geographical location to the sea and have been recorded as such below. However, when examining the remaining hazard categories, eight facilities are spatially located in some other form of hazard area, thus making it vulnerable to damage due to other hazard events. This information was obtained by overlaying GIS hazard layers onto point locations of critical facilities. A summary of Milton's vulnerability by specific hazards is given below:

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
BellSouth Telephone Central Office (Milton)	Hazmat	X			X	

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
City Garage Warehouse Facility	Governmental Operations	X	X	X	X	
Hobbs Middle School	School	X				
Jackson Pre K School	School	X	X	X		
King Middle School	School	X				
K-Mart Corporation Store #3975	Hazmat	X				
Lazy Acres	Mobile Home Park	X				
Milton City Hall	Governmental Operations	X				
Milton Community Center	Public Shelter/American Red Cross Operations	X				
Milton Fire Department	Fire Dept.	X	X	X		
Milton High School	School	X			X	
Milton Police Dept	Governmental Operations	X				
Milton, City Of Wastewater Treatment Plant	Hazmat	X	X	X		
Milton, Vacuum Sewer Station	Governmental Operations	X	X	X	X	X
Milton, Water Well 1	Hazmat	X	X	X		
Milton, Water Well 2	Hazmat					
Milton, Water Well 3	Hazmat	X				
Milton, Water Well 4	Hazmat					
Milton, Water Well 5	Hazmat	X				



Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
North Side Mobile Home Park	Mobile Home Park	X			X	
Pollards Mobile Home Park	Mobile Home Park	X				
Rhodes Elementary School	School	X				
Sandy Ridge Care Center	Adult Living Facility	X				
Santa Rosa Convalescent Center	Adult Living Facility	X				
Santa Rosa Medical Center	Hospital	X				
Vanity Fair Mobile Home Park	Mobile Home Park	X				
West Florida Community Care Center	Hospital	X				

As stated above, all facilities are deemed to be vulnerable to hurricane force winds. A more detailed explanation as to the level of vulnerability is given in section 5.4.B. Being that Milton is centrally located in the county, all structures are slightly less vulnerable to hurricane winds when compared to it's coastal neighbors.

The wildfire classification is further delineated into three sub-classes. These classes include High, Medium, and Low potential for wildfire as defined by the US Forest Service. For the purposes of this analysis only those facilities vulnerable to "High" potential were included in the table above as this category calls for the most urgent mitigation measures. The City of Milton has four critical facilities located in the "High" category.

The tri-color prioritization scheme was applied using GIS software to determine general areas or parcels in Milton that require varying levels of mitigation. The results of the analysis are detailed in the table below:

Priority	Number of Parcels
Red (High)	14
Yellow (Medium)	303
Blue (Low)	3,908

### 5.4.B Hurricane

For the purposes of this section, high wind vulnerability shall be the component analyzed. Flooding and surge events associated with hurricanes are analyzed separately further in this document. Since flooding and surge are covered in detail, the only remaining variable in a hurricane event that needs to be examined are high winds and the community's vulnerability to them.

Data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System). This system is an experimental web based system that allows emergency managers to easily access a variety of hazard related data. The following *draft* outputs were created by Kinetic Analysis Corporation under contract with the Florida Department of Community Affairs.

Historical storms (past 153 years for tropical cyclones and past 50 years) were simulated using the TAOS model, version 10.2. Winds were computed and hazard zones created based upon these simulations. Wind layers were created based on percent damage expected. Additionally, FEMA Flood Insurance Rate Map (FIRM) data was ingested, and the tabular data sets were run for comparison. (<http://stellarcom.methaz.org/lmsmaps/methodqr.html>, 2004).

It should also be noted that this TAOS wind data covers the entire county and is not jurisdiction specific. Due to the wide breadth of area this data covers, more detailed information (for example, dollars values) shall be covered in the "Unincorporated Santa Rosa County" section below since this section also covers the entire county.

This section shall outline wind speed vulnerability for the city. A summary of the wind velocity vulnerabilities for the City of Milton is summarized in the table below:

Category Event	Milton Vulnerability (mph)	Event	Milton Vulnerability (mph)
Category 1 (74-95 mph)	50-75	10 Year MLE Wind	30-75
Category 2 (96-100 mph)	85-95	25 Year MLE Wind	50-75
Category 3 (111-130 mph)	95-115	50 Year MLE Wind	50-95
Category 4 (131-155 mph)	115-130	100 Year MLE Wind	85-115
Category 5 (155+ mph)	130-160		

Source: TAOS model data; 2004, <http://www.methaz.org/lmsmaps/>

### 5.4.C Flood

Using digital Q3 and DFIRM flood data in a GIS application, 100- and 500-year flood zones were overlaid on tax parcels to determine extent of potential damage. The City of Milton has three primary flood zone types that lie within its borders. They include:

Zone Type	Zone Definition
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Zone Type	Zone Definition
X	An area that is determined to be outside the 100- and 500-year flood plains.
IN	An area designated as within a “Special Flood Hazard Area” (or SFHA) on a FIRM. This is an area inundated by 100-year flooding for which BFE’s or velocity may have been determined. No distinctions are made between the different flood hazard zones that may be included within the SFHA. These may include Zones A, AE, AO, AH, A99, AR, V, or VE.
X500	An area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage area less than 1 square mile; or an area protected by levees from 100-year flooding.

Note: Zone “X” on Q3 maps generally correlates with “Zone C” on Federal Flood Insurance Rate Maps (FIRM’s). Similarly, Zone “X500” on Q3’s generally correlates with FIRM Zone “B”.

For the purposes of this sub-section on Milton, Zone “IN” has been classified into a broader “100-year flood” cohort to streamline data analysis.

According to the analysis results, there are 430 parcels of land within the 100-year flood zone in Milton with a Just Value of \$48,109,312 or 12.8% of the Just Value of all of Milton.

There are 465 identified parcels of land in Milton that lie within the 500-year flood zone. These parcels have a Just Value of approximately \$51,447,173 or 13.7% of the Just Value of all of Milton. Flooding vulnerability for the City of Milton is summarized in the following table:

Flood Type	Number of Parcels	Percentage Milton Total Parcels	Just Value (Fair Market)	Percentage Milton Total Just Value (Fair Market)
<b>100-Year</b>	430	10.1	\$48,109,312	12.8
<b>500-Year</b>	465	11.0	\$51,447,173	13.7
<b>TOTAL</b>	<b>894</b>	<b>21.1</b>	<b>\$99,556,485</b>	<b>26.5</b>

When one correlates flood zone data to Future Land Use for the City of Milton, a more distinct image becomes apparent as to land use impacts to this type of natural hazard. The following table “fine tunes” the above data. It should also be noted that the above data was extrapolated from existing land use data for Santa Rosa County, whereas the information provided below is based upon future land use specifically for the City of Milton. The data is as follows:

Future Land Use	100 Year Zone- Total Just Value	500 Year Zone- Total Just Value	Total Flood Just Values
<b>Commercial</b>	\$1,765,409	\$160,162	<b>\$1,925,571</b>
<b>Conservation</b>	\$7,672	\$0	<b>\$7,672</b>
<b>Industrial</b>	\$766,215	\$0	<b>\$766,215</b>
<b>Multi-Family</b>	\$1,778,239	\$617,638	<b>\$2,395,877</b>
<b>Residential</b>			
<b>Public Owned</b>	<b>\$9,903,355</b>	\$0	<b>\$9,903,355</b>
<b>Land</b>			
<b>Recreation</b>	\$1,047,916	\$1,167,642	<b>\$2,215,558</b>
<b>Mixed</b>	\$3,381,121	\$11,157,320	<b>14,538,441</b>
<b>Res./Comm.</b>			
<b>Rural/Urban</b>	\$313,995	\$0	<b>\$313,995</b>
<b>Single Family</b>	\$5,461,005	<b>\$12,935,656</b>	<b>18,396,661</b>
<b>Residential</b>			
<b>Unknown</b>	\$2,900,704	\$3,040,499	<b>5,941,203</b>
<b>TOTAL</b>	<b>\$27,325,631</b>	<b>29,078,917</b>	<b>\$56,404,548</b>

**Note:** The values expressed in yellow indicate the highest categorical values per flood event.

Values in the 100- and 500 year flood zones are mutually exclusive. Meaning that parcels within one zone are not included in the other; hence, the “\$0” values in four cells of the “500 Year Zone-Total Just Value” column. Public Owned Property (\$9,903,355) held the highest Just Value in the 100-year flood zone, while Single Family Residential listed as the highest Just Value (\$12,935,656) category in the 500-year flood zone category.

In summary, when looking at both categories holistically, Mixed Use Res./Comm. and Single Family Residential categories ranked among the highest on the table. Significant mitigation attention should be allotted to these uses for future planning needs due to the significant human population involved with these land uses.

#### **5.4.D Land Erosion**

Milton’s topography lends itself to some land erosion vulnerabilities. Most commonly, erosion is associated with sandy sedimentation on streets, stormwater systems, and ponds or rivers and creeks. Erosion is most often caused by construction activities (opening of soft sandy soils) to rain events (leading to sedimentation transport on slopes).

It is rare for structures to be impacted by such erosion. More often, roadways, drainage systems, and natural creeks and water bodies are the recipients of sedimentation problems.

The primary means used to control unwanted erosion include screening and hay baling on and near construction sites. Milton has also implemented several multi-million dollar programs to control stormwater and sedimentation problems. Stormwater retention

ponds, now required in virtually all new development, have greatly reduced problems of erosion and stormwater runoff once construction is completed.

Mitigation measures are generally considered regulatory. However, erosion issues not yet identified could require public expenditure and grant applications to relieve erosion, probably related to stormwater management activities where development occurred before current new development regulations were adopted in building and planning codes.

#### ***5.4.E Storm Surge***

Using digital storm surge data from the United States Army Corps of Engineers in a GIS application, Category 1, 2, 3, 4, and 5 storm surge zones (Saffir/Simpson Scale) were overlaid on tax parcels to determine extent of potential damage. The City of Milton has all five primary storm surge categories that impact structures within its borders. These categories are defined in the above section regarding the City of Gulf Breeze.

According to the analysis results, there are 34 parcels of land within the Category One storm surge zone in Milton with a Just Value of \$1,685,311 or <1% of the Just Value of all of Milton.

There are 75 identified parcels of land in Milton that lie within the Category Two storm surge zone. These parcels have a Just Value of approximately \$3,215,264 or <1% of the Just Value of all of Milton.

There are 225 identified parcels of land in Milton that lie within the Category Three storm surge zone. These parcels have a Just Value of approximately \$13,632,970 or 3.6% of the Just Value of all of Milton.

There are 459 identified parcels of land in Milton that lie within the Category Four storm surge zone. These parcels have a Just Value of approximately \$41,380,539 or 11.0% of the Just Value of all of Milton.

There are 663 identified parcels of land in Milton that lie within the Category Five storm surge zone. These parcels have a Just Value of approximately \$62,026,305 or 16.5% of the Just Value of all of Milton.

Storm surge vulnerability for the City of Milton is summarized in the following table:

Category Storm Surge	Number of Parcels	Percentage Milton Total Parcels	Just Value (Fair Market)	Percentage Milton Total Just Value (Fair Market)
<b><i>1</i></b>	34	5.7	\$1,685,311	<1.0
<b><i>2</i></b>	75	11.4	\$3,215,264	<1.0

Category Storm Surge	Number of Parcels	Percentage Milton Total Parcels	Just Value (Fair Market)	Percentage Milton Total Just Value (Fair Market)
3	225	15.0	\$13,632,970	3.6
4	459	36.9	\$41,380,539	11.0
5	663	55.9	\$62,026,305	16.5
<b>TOTAL<sup>2</sup></b>	<b>663</b>	<b>55.9</b>	<b>\$62,026,305</b>	<b>16.5</b>

When data storm surge data is coupled with future land use categories for Milton, one gets a clearer idea of specific sectors of the community that could be the most impacted by increasing degrees of storm surge activity. There is no existing land use data for Milton however zoning data is available. Zoning data was not utilized in this study due to the dynamic nature of zoning changes. Whereas existing land use can explain conditions on the land today, zoning applications to parcels can very well be different. For example, a parcel could be zoned commercial, but have a residential, pre-existing use.

When correlated with storm surge zones by utilizing GIS technology, the parcels were then categorized and placed in the following table for better analysis based upon the future land use classification scheme used by the City of Milton. The table is as follows:

	Category 1	Category 2	Category 3	Category 4	Category 5
Commercial	\$111,592	\$111,592	\$278,907	\$4,336,118	\$13,817,791
Conservation	\$54,489	\$54,489	\$54,489	\$54,489	\$54,489
Industrial	<b>\$466,503</b>	\$645,758	\$766,215	\$766,215	\$766,215
Multi-family Residential	\$29,667	\$357,363	\$1,055,034	\$1,669,622	\$1,855,451
Public Owned Property	\$149,267	\$149,267	<b>\$4,054,347</b>	\$9,950,172	\$9,962,172
Recreation	\$159,361	\$595,617	\$658,702	\$1,437,130	\$2,604,772
Mixed Res./Comm	\$410,662	\$486,970	\$2,053,584	<b>\$11,042,427</b>	\$15,002,493
Rural/Urban	\$114,879	\$114,879	\$258,141	\$293,610	\$318,895
Single Family Residential	\$0	\$195,760	\$3,890,274	\$9,869,045	<b>\$17,365,915</b>
Unknown	\$288,258	<b>\$720,151</b>	\$1,334,338	\$5,791,138	\$8,741,390

**Note:** The values expressed in **yellow** indicate the highest categorical values per storm surge.

Based upon the data above, Industrial land use composes the highest Just Value category for threat under a Category One storm surge (and all surge categories) in the City of Milton at \$466,536. The second and third largest land uses vulnerable under this surge category include Mixed Res./Comm. (\$410,662) and Unknown properties (\$288,258), respectively.

<sup>2</sup> Category Five (5) storm surge amounts were used for the total because the boundaries of all other storm surge zones and applicable parcels are all spatially located within the Category Five. These totals represent the maximum damage foreseeable due to storm surge activity. This methodology was chosen to prevent overlap of data and skewing results.

Unknown land uses compose the largest amount of territory under threat from a Category Two storm surge with a Just Value of \$720,151. The second and third largest land use categories falling within this surge category include Industrial (\$645,758) and Recreation (\$595,617) uses, respectively.

Under a Category Three surge event, Public Owned Property (\$4,054,347) is the largest sector of land use hit the hardest. Single Family Residential (\$3,890,274) and Mixed Res./Comm. (\$2,053,584) land uses compose the second and third largest categories affected by this level of surge, respectively.

Mixed Res./Comm. (\$11,042,427) composes the largest area of affected land during this level of surge event. Public Owned Property is the second largest category with a Just Value of \$9,950,172 and Single Family Residential properties the third largest with a Just Value of \$9,869,045.

Finally, under a Category Five event, the largest land use affected is Single Family Residential land (\$17,365,915). Ranking second is Mixed Res./Comm. with a Just Value of \$15,002,493. Ranking third are Commercial properties with a Just Value of \$13,817,791.

In summary, when analyzing all categories of storm surge in order of increasing severity, the maximum level of most applicable damage generally changes from more industrial uses under weaker surge events to residential uses under the most powerful surge.

#### ***5.4.F Severe Storms***

A vulnerability to severe storms is present throughout Milton. The risk assessment of this plan identifies tornadoes, waterspouts, severe thunderstorms, lightning, winter storms, heat and drought as possibilities in the area.

Vulnerability is simply through presence. All structures and infrastructure are vulnerable to severe weather in Milton.

Tornadoes and waterspouts are virtually impossible to predict (in terms of exact location of formation and path), although technologies such as Doppler Radar are enabling weather forecasters to give accurate warnings during formation and identification of an event. Aside from strong building codes (generally developed around the premise of hurricane mitigation and protection), vulnerability to these events will always be present and difficult to mitigate against.

Thunderstorms and lightning damage can be prevented. Existing and strengthened building codes (usually under consideration to prevent hurricane damage) will provide strength against severe thunderstorm events (especially high winds and hail). Lightning damage is preventable when proper electrical grounding, following building and fire codes, will also prevent damage. Electronic equipment is highly vulnerable to lightning

strikes. Good common sense and planning by those using such equipment can prevent or reduce damage due to lightning events.

Winter storm vulnerability is possible in Milton. This is due to its inland location about 25 miles north of the Gulf of Mexico. Still, the greatest vulnerabilities would be ice accumulation on bridges leading into and out of the City, ice on electrical lines, and loss of electricity. All residents, business and governmental organizations would be vulnerable. Severe cold can also cause strains on the electrical generation system (provided by Gulf Power Company). Loss of electrical power due to high demand could cause problems for vulnerable populations (especially the elderly).

Similarly, heat waves may cause excessive demand on electrical systems. Air conditioning is a given for most residents. Loss of the ability to cool air in a heat wave could mean the possibilities of opening shelters for vulnerable populations. Although all residents and businesses are vulnerable to heat waves, air conditioning generally mitigates the issue.

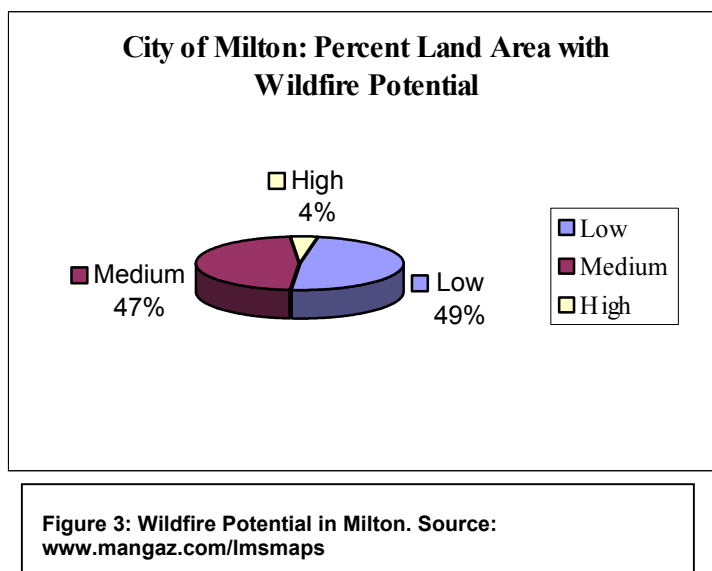
Drought can cause water use restrictions, but does not mean that water is unavailable in the area. Water is delivered via ground water well systems from an aquifer with abundant water resources. Drought can lead to firefighting difficulties (analyzed under wildfire vulnerability assessments).

In all cases, loss of commercial grid electricity is the primary vulnerability for the area. Without a source of electricity, cooling, heating, communications and water supplies cannot be assured.

#### **5.4.G Wildfire**

The City of Milton is vulnerable to approximately \$373,436,512 (Just Value) in damages due to any wildfire event. Similar to the hurricane data provided above, the data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System); an experimental web based system that allows emergency managers to easily access a variety of hazard related data.

Using the same methodology as the analysis on Gulf Breeze, GIS data depicting wildfire vulnerability were overlaid upon tax





parcels whereby values for damage could be assessed. The result of the analysis indicates forty nine percent of the land area in Milton is vulnerable to low potential for wildfire, forty seven percent of medium, and four percent considered high potential for wildfire (see Figure 3).

Similar to the above sections, Future Land Use data is available for the City of Milton. Coupling this land use data with the wildfire information, wildfire vulnerability by land use can be forecast. The summary of this data is offered in the table below:

	Low Potential	Medium Potential	High Potential
Commercial	\$158,309,760	\$122,009,392	\$19,183,805
Conservation	\$155,795	\$0	\$0
Industrial	\$5,347,751	\$3,979,915	\$117,215
Multi-family Residential	\$100,185,194	\$87,480,571	\$10,076,532
Public Owned Property	\$161,278,919	\$120,405,204	\$7,346,178
Recreation	\$16,218,209	\$8,724,165	\$4,566,923
Mixed Res./Comm	\$18,786,992	\$3,657,081	\$1,560,161
Rural/Urban	\$684,891	\$1,144,251	\$0
Single Family Residential	\$160,150,481	\$154,726,915	\$25,848,105
Unknown	\$63,544,101	\$111,283,049	\$6,182,443

**Note:** The values expressed in yellow indicate the highest categorical values per potential risk.

Out of all three categories of wildfire potential, Single Family Residential leads with the largest Just Value amounts for all three categories. Other categories that also generally ranked highest out of all three categories and should also be acknowledged for mitigation would include Commercial, Public Owned Property, and Multi-family Residential. Interestingly, the land uses most vulnerable to wildfire are those involving human residential settlement.

#### **5.4.H Other Hazards**

As identified in Section Four, there are a number of other hazards that affect Santa Rosa County. However, the direct impacts of these hazards in relation to mitigation applications is somewhat negligible, but worth mentioning. These hazards are covered comprehensively for Santa Rosa County below in the section “Unincorporated Santa Rosa County”. It should also be noted that this analysis covers both incorporated and unincorporated areas due to the broad geographical area the base data covers.

### **5.5 Unincorporated Santa Rosa County**

#### **5.5.A Community Mitigation Overview**

*(See Appendix 5.5.A. map series)*

*(Note: Navarre Beach data are often separated in Section 5.5 from other portions of the County. This was done because much of the Geographical Information System – GIS – data sets are separated from the County due to past jurisdiction control of the area with Escambia County. Staff was able to separate these data from Escambia County sets, and*

*chose to keep them separate for planning purposes due to Navarre Beach being particularly vulnerable to hurricane/storm surge hazards because of it being a coastal barrier island.*

Unincorporated Santa Rosa County houses the largest proportion of population and parcels in the study area. The majority of the unincorporated land area lies in the northern portion of the county, north of the City of Milton (the County Seat). The unincorporated area of Santa Rosa County has a population of 104,454 according to Census 2000. There are approximately 73,605 parcels of land in the unincorporated county that have a “Just Value” of roughly \$3,094,925,306.

Santa Rosa County’s vast acreage is vulnerable to many disaster situations. Flooding (whether it be coastal, riverine, or urban) is a frequent problem for structures in floodplains, surge zones, or a combination of the two, or in flood-prone areas not otherwise documented on FEMA or U.S. Army Corps of Engineers’ maps. Navarre Beach is particularly prone to flooding due to its position directly on the Gulf of Mexico on Santa Rosa Island (a coastal barrier island). Navarre, Holley-By-The-Sea, Midway, and the neighborhoods east of the City of Gulf Breeze on the Fairpoint Peninsula are particularly vulnerable to hurricane-related and coastal flooding. Additionally, structures along the shorelines and sometimes inland on Garcon Point, including Avalon Beach, Dickerson City, Bayside, Floridatown, and Bagdad, are floodprone. Along East Bay, the community of Holley is vulnerable. Riverine flooding can be experienced along Pond Creek, Blackwater River, Yellow River, Big Coldwater Creek, and the Escambia River, with particular concern in some neighborhoods in East Milton along River Road and Ward Basin Road. These areas have historically received the majority of flood related damage in the unincorporated portions of the County. Although extensive mitigation efforts have occurred, and participation in the National Flood Insurance Program has raised floor elevations, flood damage still occurs on older structures and against infrastructure (roads, bridges, etc.).

Hurricane and high wind damage can be expected anywhere in the County. The greatest damage will be found along coastal areas (Navarre Beach and the entire Fairpoint Peninsula, and along bay shores along East, Escambia and Blackwater Bays). Inland areas can experience full force winds, regardless of their not being located directly on the coast. Pace, Milton, Jay, Allentown, and Munson can all experience high winds from thunderstorms and hurricanes. Structural damage can be expected in extreme circumstances.

All areas of the County are vulnerable to tornado and waterspout activity.

Drought can impact agricultural areas and some water systems (more from high demand than shortage of water in the aquifer, however).

Snow and especially ice storms could cause problems in the County, but these are very rare events, and would likely create difficulties north of Interstate 10.

For the purposes of this study, “Just Value” is used for estimating monetary damage due to flood hazards. According to the Santa Rosa County Property Appraisers Office, Just Value is the value established by the Property Appraiser *for ad valorem purposes* and includes both the structural and land value. Under Florida Law, Just Value has been the term coined for representing Fair Market Value.

Existing and Future Land Use data was provided for the entire unincorporated county. This will allow a more detailed analysis into the amounts of damage the community is vulnerable based upon what is currently there and where it will be in the foreseeable future.

Whereas this sections covers unincorporated areas in the county, the region of Navarre Beach will be given special consideration in each of the sub-sections below. This region is not an officially incorporated area, but, due to specific County/Federal agreements, functions as one. This region has a considerable amount of development and is located virtually on the beachfront, as the whole area is a peninsula. This region is composed of roughly 1043 parcels with a Just Value of approximately \$629,659,725.

Based upon GIS analysis and county records, there are 201 identified critical facilities in Unincorporated Santa Rosa County. All facilities are vulnerable to hurricane force winds due to sheer geographical location to the sea and have been recorded as such below. However, when examining the remaining hazard categories, 28 facilities are spatially located in some other form of hazard area, thus making it vulnerable to damage due to other hazard events. This information was obtained by overlaying GIS hazard layers onto point locations of critical facilities. For the purposes of this analysis, only those facilities that are vulnerable to hazards will be included in the table below. The full list of all critical facilities for the entire county is maintained within the Comprehensive Emergency Management Plan (CEMP) (maintained by the County Emergency Management Office). The list in the CEMP is dynamic. Readers of the LMS plan should refer to the CEMP for the latest information. An abbreviated summary of the unincorporated county’s vulnerability by specific hazard is given below:

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
Air Products & Chemicals Inc.	HAZMAT Facility	X			X	
Bagdad Elementary	School	X		X		
Bagdad Volunteer Fire Department	Fire Department	X		X	X	
Bay View	Mobile Home Park	X		X		
Bear Lake Rec Area	Recreational Vehicle Parking	X	X			
Blackwater State	Recreational	X	X			

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
Park	Vehicle Parking					
Browns Fish Camp	Mobile Home Park	X	X	X		
By The Bay	Recreational Vehicle Parking	X	X	X		
Coastal Oaks	Mobile Home Park	X		X		
Coldwater Recreational Area	Recreational Vehicle Parking	X	X			
Colemans Court	Mobile Home Park	X		X		
East Bay	Mobile Home Park	X		X		
Emerald Beach	Recreational Vehicle Parking	X		X		
Falconhurst	Mobile Home Park	X		X		
Hardies #1	Mobile Home Park	X		X		
Helen's	Recreational Vehicle Parking	X		X		
Holley-Navarre Volunteer Fire Department	Fire Department	X		X		
Holly-Navarre Middle	School	X		X		
Magnolia Beach	Recreational Vehicle Parking	X			X	
Pace	Mobile Home Park	X			X	
Pace Water System, Well #1	HAZMAT Facility	X			X	
Pea Ridge Elementary School	School	X			X	
Shadyoaks	Mobile Home Park	X	X	X		
Ski-Land Fish	Mobile	X	X	X		

Facility	Facility Classification	Hurricane	Flood	Storm Surge	Wildfire	Other hazards
Camp	Home Park					
South Santa Rosa Utility System Waterwater Treatment Plant	HAZMAT Facility	X		X	X	
Still Waters	Mobile Home Park	X			X	
The Oaks	Mobile Home Park	X		X		
Whiting Field Nas-North	Navy	X			X	

The tri-color prioritization scheme was applied using GIS software to determine general areas or parcels in unincorporated Santa Rosa County that require varying levels of mitigation. It should be noted that the results of the analysis were derived by totaling all red, yellow and blue areas parcels in the incorporated areas and subtracting these numbers from the total red, yellow, and blue parcels for the entire county. The results of the analysis are detailed in the table below:

Priority	Number of Parcels
Red (High)	1,336
Yellow (Medium)	17,063
Blue (Low)	55,206

### 5.5.B Hurricane

**Note: The information below excludes the region of Navarre Beach.**

For the purposes of this section, high wind vulnerability shall be the component analyzed. Flooding and surge events associated with hurricanes are analyzed separately further in this document. Since flooding and surge are covered in detail, the only remaining variable in a hurricane event that needs to be examined are high winds and the community's vulnerability to them.

Data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System). This system is an experimental web based system that allows emergency managers to easily access a variety of hazard related data. The following *draft* outputs were created by Kinetic Analysis Corporation under contract with the Florida Department of Community Affairs.

Historical storms (past 153 years for tropical cyclones and past 50 years) were simulated using the TAOS model, version 10.2. Winds were computed and hazard zones created based upon these simulations. Wind layers were created based on percent damage

expected. Additionally, FEMA Flood Insurance Rate Map (FIRM) data was ingested, and the tabular data sets were run for comparison. (<http://stellarcom.methaz.org/lmsmaps/methodqr.html>, 2004).

It should also be noted that this TAOS wind data covers the entire county and is not jurisdiction specific. Due to the wide breadth of geographic area this data covers, more detailed information will be covered in section since this section also covers the entire county. Building counts and values are also included in this section according to each respective wind category.

This table shall outline wind speed vulnerability for buildings in the **entire** county (incorporated and unincorporated areas) by hurricane categories. A summary of the wind velocity vulnerabilities is below:

Category Event	Category 1	Category 2	Category 3	Category 4	Category 5
Value in No Damage	\$205,139,296	\$179,671,584	\$179,671,584	\$179,671,584	\$179,671,584
Value in Light Damage (less than 10%)	\$11,400,126,464	\$949,355,840	\$271,407,360	\$36,833,712	\$36,833,712
Value in Moderate Damage (10 - 30%)	NA	\$10,476,175,360	\$11,003,332,608	\$588,604,736	\$20,728,444
Value in Heavy Damage (30 - 50%)	NA	NA	\$150,842,704	\$339,066,400	\$232,479,088
Value in Severe Damage (50 - 80%)	NA	NA	NA	\$10,461,020,160	\$624,242,304
Value in Destroyed (over 80%)	NA	NA	NA	NA	\$10,511,243,264
Bldgs. in No Damage	2,665	2,119	2,119	2,119	2,119
Bldgs. in Light Damage (less than 10%)	121,230	9,008	2,835	645	645
Bldgs in Moderate Damage (10 - 30%)	NA	112,768	117,489	5,834	159
Bldgs. in Heavy Damage (30 - 50%)	NA	NA	1,452	2,576	2,128

Category Event	Category 1	Category 2	Category 3	Category 4	Category 5
Bldgs. in Severe Damage(50 - 80%)	NA	NA	NA	112,721	5,673
Bldgs. in Destroyed ( over 80%)	NA	NA	NA	NA	113,171

Source: TAOS model data; 2004, <http://www.methaz.org/lmsmaps/>

When coupling the above data with the recurrence intervals of hurricane events as outlined below, a more detailed picture becomes apparent. The recurrence intervals and correlating damage values are expressed in the table below:

Category Event	TAOS 10 Year	TAOS 25 Year	TAOS 50 Year	TAOS 100 Year
Value in No Damage	\$ 11,301,126,144	NA	NA	NA
Value in Light Damage (less than 10%)	\$ 304,153,920	\$ 11,605,252,096	\$ 11,605,252,096	\$ 11,520,585,728
Value in Moderate Damage (10 - 30%)	NA	NA	NA	\$ 84,658,696
Bldgs. in No Damage	120,852	NA	NA	NA
Bldgs. in Light Damage (less than 10%)	3,043	123,895	123,894	122,841
Bldgs in Moderate Damage (10 - 30%)	NA	NA	NA	1,054

Source: TAOS model data; 2004, <http://www.methaz.org/lmsmaps/>

### 5.5.C Flood

**Note: The information below excludes the region of Navarre Beach.**

Using digital Q3 flood data in a GIS application, 100- and 500-year flood zones were overlaid on tax parcels to determine extent of potential damage. Unincorporated Santa Rosa County has six primary flood zone types that lie within its borders. They include:

Zone Type	Zone Definition
-----------	-----------------

Zone Type	Zone Definition
X	An area that is determined to be outside the 100- and 500-year flood plains.
IN	An area designated as within a “Special Flood Hazard Area” (or SFHA) on a FIRM. This is an area inundated by 100-year flooding for which BFE’s or velocity may have been determined. No distinctions are made between the different flood hazard zones that may be included within the SFHA. These may include Zones A, AE, AO, AH, A99, AR, V, or VE.
AE	An area inundated by 100-year flooding, for which BFE’s have been determined.
VE	An area inundated by 100-year flooding with velocity hazard (wave action); BFE’s have been determined.
UNDESC	A body of open water, such as a pond, lake, ocean, etc., located within a community’s jurisdictional limit that has no defined flood hazard.
X500	An area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage area less than 1 square mile; or an area protected by levees from 100-year flooding.

Note: Zone “X” on Q3 maps generally correlates with “Zone C” on Federal Flood Insurance Rate Maps (FIRM’s). Similarly, Zone “X500” on Q3’s generally correlates with FIRM Zone “B”.

For the purposes of this section on Unincorporated Santa Rosa County, Zone “IN”, “AE”, and “VE” have been classified into a broader “100-year flood” cohort to streamline data analysis.

According to the analysis results, there are 9,044 parcels of land within the 100-year flood zone in the unincorporated areas with a Just Value of \$1,030,060,285 or 33.3% of the Just Value of all of the unincorporated.

There are 9,044 and 3,102 identified parcels of land in unincorporated area that lie within the 100- and 500-year flood zone, respectively. These parcels have a Just Value of approximately \$1,030,060,285 or 33.3% of all the Just Value of unincorporated Santa Rosa County in the 100-year flood zone. The 500-year flood zone houses \$497,776,578 or 16.1% of the Just Value of all of unincorporated Santa Rosa County. Flooding vulnerability for Unincorporated Santa Rosa County is summarized in the following table:

Flood Type	Number of Parcels	Percentage Total Parcels	Just Value (Fair Market)	Percentage Total Just Value (Fair Market)
<b>100-Year</b>	9,044	11.1	\$1,030,060,285	33.3
<b>500-Year</b>	3,102	3.8	\$497,776,578	16.1
<b>TOTAL</b>	<b>12,146</b>	<b>14.9</b>	<b>\$1,527,836,863</b>	<b>49.4</b>



When one correlates flood zone data to Future Land Use for unincorporated Santa Rosa County, a more distinct image becomes apparent as to land use impacts to this type of natural hazard. As with the City of Milton data above, the following table serves to “fine tune” flood data listed above. However, unlike the section on the City of Milton where the data for existing land use was not available, this section shall utilize both existing and future land use. The data is as follows:

Existing Land Use	100 Year Zone- Total Just Value	500 Year Zone- Total Just Value	Total Flood Just Values
<i>Agriculture</i>	\$7,369,533	\$9,768,873	<b>\$17,138,406</b>
<i>Agriculture/Homestead</i>	\$35,649,521	\$4,328,429	<b>\$39,977,950</b>
<i>Condo/Townhome</i>	\$39,752,777	\$3,223,159	<b>\$42,975,936</b>
<i>City</i>	\$147,538,837	\$168,021,576	<b>\$315,560,413</b>
<i>Commercial</i>	\$33,215,465	\$20,695,313	<b>\$53,910,778</b>
<i>Industrial</i>	\$3,111,793	\$2,317,165	<b>\$5,428,958</b>
<i>Institutional</i>	\$6,106,789	\$3,840,414	<b>\$9,947,203</b>
<i>Multi-Family</i>	\$0	\$221,581	<b>\$221,581</b>
<i>Residential 1</i>			
<i>Multi-Family</i>	\$7,750,953	\$2,070,892	<b>\$9,821,845</b>
<i>Residential 2</i>			
<i>Military</i>	\$24,354,317	\$0	<b>\$24,354,317</b>
<i>Mixed Res./Comm.</i>	\$1,502,256	\$590,997	<b>\$2,093,253</b>
<i>Office</i>	\$4,106,341	\$1,289,331	<b>\$5,395,672</b>
<i>Public Owned Property</i>	\$334,061,584	\$8,552,069	<b>\$342,613,653</b>
<i>Recreation/Commercial</i>	\$0	\$11,886,152	<b>\$11,886,152</b>
<i>Recreation/Open Space</i>	\$49,815,551	\$11,426,762	<b>\$61,242,313</b>
<i>Right-of-Way</i>	\$233,531,904	\$50,722,306	<b>\$284,254,210</b>
<i>Single Family Residential</i>	<b>\$818,648,580</b>	<b>\$256,782,475</b>	<b>\$1,075,431,055</b>
<i>Silviculture</i>	\$9,397,089	\$4,630,537	<b>\$14,027,626</b>
<i>Unknown</i>	\$3,104,272	\$442,394	<b>\$3,546,666</b>
<i>Utility</i>	\$237,997	\$25,375	<b>\$263,372</b>
<i>Vacant</i>	\$461,154,107	\$120,044,806	<b>\$581,198,913</b>
<i>Water</i>	\$20,879,778	\$1,435,735	<b>\$22,315,513</b>
<b>TOTAL</b>	<b>\$2,307,615,244</b>	<b>\$682,316,241</b>	<b>\$2,989,931,485</b>

Note: The values expressed in yellow indicate the highest categorical values per flood event.

Single Family Homes clearly dominates as the land use category most susceptible to flooding events. Vacant, City, and Public Owned Property also ranked among the highest as indicated above. Based upon this analysis, mitigation attention should be directed toward the built environment with home units garnering the more direct short-term attention.

Future Land Use	100 Year Zone- Total Just Value	500 Year Zone- Total Just Value	Total Flood Just Values
<i>Agriculture</i>	\$125,750,768	\$18,223,595	<b>\$143,974,363</b>
<i>City</i>	\$154,797,997	\$168,022,576	<b>\$322,820,573</b>
<i>Commercial</i>	\$81,750,347	\$26,835,774	<b>\$108,586,121</b>
<i>Conservation/Recreation</i>	\$340,056,065	\$12,563,264	<b>\$352,619,329</b>
<i>Garcon Point Rural Residential</i>	\$84,184,395	\$38,233,971	<b>\$122,418,366</b>
<i>Garcon Point Single Family Residential</i>	\$174,206,272	\$58,569,021	<b>\$232,775,293</b>
<i>Bagdad Historic District</i>	\$1,727,831	\$3,198,085	<b>\$4,925,916</b>
<i>Industrial</i>	\$6,936,097	\$3,741,743	<b>\$10,677,840</b>
<i>Marina</i>	\$5,821,655	\$387,597	<b>\$6,209,252</b>
<i>Military</i>	\$23,953,077	\$0	<b>\$23,953,077</b>
<i>Mixed Res./Comm.</i>	\$55,899,314	\$36,624,025	<b>\$92,523,339</b>
<i>Navarre Beach Commercial</i>	\$13,065,332	\$0	<b>\$13,065,332</b>
<i>Navarre Beach Low Density Residential</i>	\$61,865,147	\$0	<b>\$61,865,147</b>
<i>Navarre Beach Medium Density Residential</i>	\$587,366	\$0	<b>\$587,366</b>
<i>Navarre Beach Medium/High Density Residential</i>	\$29,259,258	\$0	<b>\$29,259,258</b>
<i>Navarre Beach Mixed Res./Comm.</i>	\$64,962,260	\$0	<b>\$64,962,260</b>
<i>Navarre Beach Utilities Residential</i>	\$60,509,267	\$0	<b>\$60,509,267</b>
<i>Single Family Residential</i>	\$29,008,931	\$20,364,632	<b>\$49,373,563</b>
<i>Water</i>	\$546,688,489	\$205,307,524	<b>\$751,996,013</b>
<i>Unknown</i>	\$22,284,357	\$1,061,548	<b>\$23,345,905</b>
<i>TOTAL</i>	\$274,235,983	\$54,033,679	<b>\$328,269,662</b>
<b>TOTAL</b>	<b>\$2,144,484,876</b>	<b>\$647,167,034</b>	<b>\$2,791,651,910</b>

**Note:** The values expressed in yellow indicate the highest categorical values per flood event.

Similar to the data presented for Existing Land Use, Single Family Residential uses rank as the top land use category vulnerable to flood events. Also following this land use in rank order of vulnerability based upon Just Value is Conservation/Recreation, Unknown, City, and Garcon Point Single Family Residential.

### 5.5.C1 Navarre Beach

For the purposes of this section on Navarre Beach, Zone “A”, “AE”, “AO”, and “VE” have been classified into a broader “100-year flood” cohort to streamline data analysis

similar to the above analysis on Unincorporated Santa Rosa County. An “X” classification indicates that a parcel is outside of the 100- and 500-year flood zone.

According to the analysis results, there are 1,037 (out of 1,038) parcels of land within the 100-year flood zone in Navarre Beach with a Just Value of \$1,124,247,768 or 99.9% of the Just Value of all of Navarre Beach or, simply, all the parcels save one are in the 100-year flood zone. There is one parcel that has been designated in the “X” zone or outside the limits of both the 100- and 500-year flood zone. This being the case, 500-year flood categories were not included in the tables below. Flooding vulnerability for Navarre Beach is summarized in the following:

Flood Type	Number of Parcels	Percentage Total Parcels	Just Value (Fair Market)	Percentage Total Just Value (Fair Market)
<b>100-Year</b>	1,037	99.9	\$1,124,247,768	99.9
<b>TOTAL</b>	<b>1,037</b>	<b>99.9</b>	<b>\$1,124,247,768</b>	<b>99.9</b>

When one correlates flood zone data to Future Land Use for Navarre Beach, a more distinct image becomes apparent as to land use impacts to this type of natural hazard. As with the City of Milton data above, the following table serves to “fine tune” flood data listed above. However, unlike the section on the City of Milton where the data for existing land use was not available, this section shall utilize both existing and future land use. The data is as follows:

Existing Land Use	100 Year Zone- Total Just Value	Total Flood Just Values
<i>Agriculture</i>	\$59,895	\$59,895
<i>Agriculture/Homestead</i>	\$0	\$0
<i>Condo/Townhome</i>	\$44,933,202	\$44,933,202
<i>City</i>	\$0	\$0
<i>Commercial</i>	\$45,501,243	\$45,501,243
<i>Industrial</i>	\$0	\$0
<i>Institutional</i>	\$0	\$0
<i>Multi-Family</i>	\$0	\$0
<i>Residential 1</i>		
<i>Multi-Family</i>	\$162,745	\$162,745
<i>Residential 2</i>		
<i>Military</i>	\$0	\$0
<i>Mixed Res./Comm.</i>	\$183,056	\$183,056

Existing Land Use	100 Year Zone- Total Just Value	Total Flood Just Values
<i>Office</i>	\$0	\$0
<i>Public Owned Property</i>	\$851,157,725	\$851,157,725
<i>Recreation/Commercial</i>	\$0	\$0
<i>Recreation/Open Space</i>	\$41,510	\$41,510
<i>Right-of-Way</i>	\$0	\$0
<i>Single Family Residential</i>	\$84,812,792	\$84,812,792
<i>Silviculture</i>	\$0	\$0
<i>Unknown</i>	\$0	\$0
<i>Utility</i>	\$0	\$0
<i>Vacant</i>	\$61,397,680	\$61,397,680
<i>Water</i>	\$400,741	\$400,741
<b>TOTAL</b>	<b>\$1,088,650,589</b>	<b>\$1,088,650,589</b>

Note: The values expressed in yellow indicate the highest categorical values per flood event.

Public Owned Property clearly dominates as the land use category most susceptible to flooding events. Single Family Residential, Vacant, and Commercial property also ranked among the highest as indicated above. Based upon this analysis, mitigation attention should be directed toward the built environment with home units garnering the more direct short-term attention.

Future Land Use	100 Year Zone- Total Just Value	Total Flood Just Values
<i>Agriculture</i>	\$282,609	\$282,609
<i>City</i>	\$0	\$0
<i>Commercial</i>	\$0	\$0
<i>Conservation/Recreation</i>	\$641,251,392	\$641,251,392
<i>Garcon Point Rural Residential</i>	\$0	\$0
<i>Garcon Point Single Family Residential</i>	\$0	\$0
<i>Bagdad Historic District</i>	\$0	\$0
<i>Industrial</i>	\$0	\$0
<i>Marina</i>	\$0	\$0

Future Land Use	100 Year Zone- Total Just Value	Total Flood Just Values
<i>Military</i>	\$0	\$0
<i>Mixed Res./Comm.</i>	\$0	\$0
<i>Navarre Beach Commercial</i>	\$226,879,129	\$226,879,129
<i>Navarre Beach High Density Residential</i>	\$15,035,704	\$15,035,704
<i>Navarre Beach Low Density Residential</i>	\$154,516,674	\$154,516,674
<i>Navarre Beach Medium Density Residential</i>	\$301,854,202	\$301,854,202
<i>Navarre Beach Medium/High Density Residential</i>	\$32,902,817	\$32,902,817
<i>Navarre Beach Mixed Res./Comm.</i>	\$69,188,340	\$69,188,340
<i>Navarre Beach Utilities Residential</i>	\$123,147,217	\$123,147,217
<i>Single Family Residential</i>	\$0	\$0
<i>Water</i>	\$1,112,306	\$1,112,306
<i>Unknown</i>	\$121,647,198	\$121,647,198
<b>TOTAL</b>	<b>\$1,687,817,588</b>	<b>\$1,687,817,588</b>

Note: The values expressed in yellow indicate the highest categorical values per flood event.

#### 5.5.D Storm Surge

**Note: The information below excludes the region of Navarre Beach.**

Using digital storm surge data from the United States Army Corps of Engineers in a GIS application, Category 1, 2, 3, 4, and 5 storm surge zones (Saffir/Simpson Scale) were overlaid on tax parcels to determine extent of potential damage. The unincorporated areas have all five primary storm surge categories that impact structures within its borders. These categories are defined in the above section regarding the City of Gulf Breeze.

According to the analysis results, there are 2,276 parcels of land within the Category One storm surge zone in unincorporated areas with a Just Value of \$293,521,297 or 9.5% of the Just Value of all of unincorporated areas.

There are 7,049 identified parcels of land in the unincorporated areas that lie within the Category Two storm surge zone. These parcels have a Just Value of approximately \$863,573,791 or 27.9% of the Just Value of all of the unincorporated areas.

There are 13,078 identified parcels of land in the unincorporated areas that lie within the Category Three storm surge zone. These parcels have a Just Value of approximately \$1,422,064,776 or 45.9% of the Just Value of all of the unincorporated areas.

There are 17,849 identified parcels of land in the unincorporated areas that lie within the Category Four storm surge zone. These parcels have a Just Value of approximately \$1,914,843,337, or 61.8% of the Just Value of all of the unincorporated areas.

There are 22,332 identified parcels of land in the unincorporated areas that lie within the Category Five storm surge zone. These parcels have a Just Value of approximately \$2,411,756,238 or 77.9% of the Just Value of all of the unincorporated areas.

Storm surge vulnerability for unincorporated Santa Rosa County is summarized in the following table:

Flood Type	Number of Parcels	Percentage Total Parcels	Just Value (Fair Market)	Percentage Total Just Value (Fair Market)
<i>1</i>	2276	2.8	\$293,521,297	9.5
<i>2</i>	7049	8.7	\$863,573,791	27.9
<i>3</i>	13,078	16.1	\$1,422,064,776	45.9
<i>4</i>	17,849	22.0	\$1,914,843,337	61.8
<i>5</i>	22,332	27.6	\$2,411,756,238	77.9
<b>TOTAL<sup>3</sup></b>	<b>22,332</b>	<b>27.6</b>	<b>\$2,411,756,238</b>	<b>77.9</b>

When data storm surge data is coupled with existing and future land use categories for the unincorporated areas, one gets a clearer idea of specific sectors of the community that could be the most impacted by increasing degrees of storm surge activity. For the purposes of this section, Just Values were correlated with storm surge zones by utilizing GIS technology. The parcels were then categorized and placed in the following table for better analysis based upon the existing land use classification scheme used by the Santa Rosa County. The table is as follows:

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<sup>3</sup> Category Five (5) storm surge amounts were used for the total because the boundaries of all other storm surge zones and applicable parcels are all spatially located within the Category Five. These totals represent the maximum damage foreseeable due to storm surge activity. This methodology was chosen to prevent overlap of data and skewing results.

	Category 1	Category 2	Category 3	Category 4	Category 5
Agriculture	\$1,667,273	\$3,863,655	\$24,413,391	\$38,817,163	\$47,930,171
Agr./Homestead	\$2,890,569	\$1,147,653	\$12,205,091	\$11,734,343	\$12,685,003
Condo/Townhome	\$9,573,198	\$9,661,995	\$10,585,283	\$19,412,013	\$20,680,231
City	\$27,388,383	\$11,864,091	\$26,041,548	\$48,773,077	\$67,920,540
Commercial	\$2,397,115	\$2,866,761	\$6,117,417	\$12,532,134	\$18,136,605
Industrial	\$413,798	\$547,480	\$4,709,767	\$4,334,426	\$3,355,556
Institutional	\$1,601,924	\$3,521,634	\$6,247,648	\$6,776,097	\$6,519,263
Multi-Family Res. 1	\$0	\$0	\$574,360	\$398,747	\$438,716
Multi-Family Res. 2	\$3,188,984	\$5,108,443	\$4,754,854	\$4,215,569	\$2,697,027
Military	\$93,310	\$202,695	\$277,531	\$182,781	\$80,795
Mixed Use	\$164,820	\$206,895	\$637,525	\$358,588	\$235,045
Office	\$120,190	\$288,384	\$722,399	\$1,305,525	\$2,244,883
Public-Owned Property	\$25,348,116	\$15,505,129	\$11,945,787	\$8,679,515	\$8,652,040
Rec./Commercial	\$339,311	\$83,050	\$145,392	\$898,556	\$190,986
Rec./Open Space	\$2,803,482	\$2,842,405	\$1,172,149	\$2,125,154	\$1,508,797
Right-of Way	\$98,349,392	\$165,535,587	\$278,496,032	\$372,574,192	\$463,615,149
Single-Family Residential	\$283,783,152	\$307,878,634	\$455,645,541	\$558,020,773	\$641,805,521
Silviculture	\$9,313,124	\$1,545,937	\$2,150,446	\$6,366,552	\$7,879,184
Unknown	\$3,282,375	\$855,793	\$4,518,501	\$8,995,007	\$11,340,993
Utility	\$0	\$265,287	\$1,057,711	\$1,685,806	\$1,292,005
Vacant	\$954,166,536	\$591,731,414	\$884,229,950	\$1,652,067,223	\$1,724,444,049
Water	\$56,477,061	\$455,912,151	\$667,466,820	\$94,042,867	\$93,993,521

**Note:** The values expressed in yellow indicate the highest categorical values per storm surge.

Based upon the data above, vacant land composes the highest Just Value category for threat under a Category One storm surge (and all surge categories) in unincorporated Santa Rosa County at \$954,166,536. The second and third largest land uses vulnerable under this surge category include Single Family Residential (\$283,783,152) and Right-of-Way properties (\$98,349,392), respectively.

Vacant land also composes the largest amount of territory under threat from a Category Two storm surge with a Just Value of \$591,731,414. The second and third largest land use categories falling within this surge category include Water (\$455,912,151) and Single Family Residential (\$307,878,634) uses, respectively.

Under a Category Three surge event, Vacant land use (\$884,229,950) again is the largest sector of land use hit the hardest. Similar to the Category Two surge event, Water (\$884,466,820) and Single Family Residential (\$455,645,541) land uses compose the second and third largest categories affected by this level of surge, respectively.

When analyzing vulnerability during a Category Four surge event, one finds a similar pattern as to that under a Category One event. Vacant land, again, composes the largest area of affected land (\$1,652,067,223) during this level of surge event. Single Family Residential is the second largest category with a Just Value of \$558,020,773 and Right-of-Way properties the third largest with a Just Value of \$372,574,192.



Finally, under a Category Five event, the largest land use affected is Vacant land (\$1,724,444,049). Ranking second is Single Family Residential with a Just Value of \$641,805,521. Ranking third is Right-of-Way properties with a Just Value of \$463,615,149.

Using the same methodology as above, future land uses were analyzed by category of storm surge vulnerability as relating to Just Values. The table is as follows:

	Category 1	Category 2	Category 3	Category 4	Category 5
Agriculture	\$17,290,845	\$24,007,378	\$33,617,160	\$46,871,352	\$53,832,003
City	\$675,728,398	\$605,445,149	\$827,403,797	\$878,213,848	\$793,590,434
Commercial	\$12,224,724	\$56,046,398	\$114,450,645	\$96,805,575	\$181,969,907
Conservation/Recreation	\$100,475,298	\$81,899,078	\$87,956,806	\$99,455,882	\$106,058,418
GP Rural Residential	\$53,996,887	\$75,976,163	\$96,412,650	\$100,121,180	\$103,740,112
GP Single Family Residential	\$109,550,378	\$164,091,982	\$217,550,852	\$227,393,569	\$236,736,045
Bagdad Historical District	\$656,808	\$1,210,170	\$4,612,537	\$10,356,349	\$13,237,551
Industrial	\$2,098,768	\$2,864,644	\$4,931,066	\$8,369,355	\$13,688,575
Marina	\$4,849,020	\$5,005,964	\$5,368,633	\$5,368,633	\$5,590,065
Military	\$9,558,912	\$72,365,870	\$80,167,480	\$85,074,671	\$85,673,788
Mixed Use Residential	\$13,649,951	\$71,082,320	\$145,028,200	\$236,119,395	\$279,723,237
Residential	\$30,860,817	\$42,785,609	\$78,361,017	\$106,593,112	\$124,288,765
Single Family Residential	\$482,014,211	\$642,095,540	\$829,579,209	\$1,001,645,675	\$1,149,315,474
Water	\$5,525,566	\$11,459,563	\$20,896,859	\$22,115,988	\$22,191,307
Unkown	\$104,766,985	\$193,339,941	\$317,212,732	\$386,638,144	\$489,996,211

**Note:** The values expressed in yellow indicate the highest categorical values per storm surge.

Based upon data for Future Land Use, City land uses compose the highest Just Value category for threat under a Category One storm surge (and all surge categories) at \$675,728,398. The second and third largest land uses vulnerable under this surge category include Single Family Residential (\$482,014,211) and GP Single Family Residential properties (\$109,550,378), respectively.

Single Family Residential composes the largest amount of territory under threat from a Category Two storm surge with a Just Value of \$642,095,540. The second and third largest land use categories falling within this surge category include City (\$605,445,149) and Unknown (\$193,339,921) uses, respectively.

Category Three storm surge affects Single Family Residential (\$829,579,209) the most, again, as it is the largest sector of land use vulnerable. City (\$827,403,797) and Unknown (\$317,212,732) uses compose the second and third largest categories affected by this level of surge, respectively.

Single Family Residential uses, again, compose the largest category of use affected by Category Four surge (\$1,001,645,675). Much like the Category Three surge even, City (\$878,213,848) and Unknown (\$386,638,144) uses compose the second and third largest categories affected by surge of this magnitude.



Finally, under a Category Five event, the largest land use affected is Single Family Residential land (\$1,149,315,474). Ranking second are City uses with a Just Value of \$793,590,434. Ranking third are Unknown uses with a Just Value of \$489,996,211.

In summary, when analyzing all categories of storm surge, the most obvious existing land use categories to be vulnerable to storm surge are Single Family Residential, City, and Unknown uses. However, being that this section is concentrating on unincorporated areas, if one excludes City uses, other high values affected by surge that would demand considerable mitigation attention include GP Family Residential and Mixed Use Residential. It should also be noted that the above values were for all areas in Santa Rosa County **including cities and other incorporated urban environments**; thus the high values and heavy weighting towards more City uses in this section.

#### **5.5.D1 Navarre Beach**

According to the analysis results, there are 206 parcels of land within the Category One storm surge zone in unincorporated areas with a Just Value of \$207,447,941 or 32.9% of the Just Value of all of the Navarre Beach area.

There are 601 identified parcels of land in the unincorporated areas that lie within the Category Two storm surge zone. These parcels have a Just Value of approximately \$386,972,322 or 61.4% of the Just Value of all of Navarre Beach area.

There are 988 identified parcels of land in the unincorporated areas that lie within the Category Three storm surge zone. These parcels have a Just Value of approximately \$555,265,328 or 88.1% of the Just Value of all of the Navarre Beach area.

There are 1,018 identified parcels of land in the unincorporated areas that lie within the Category Four storm surge zone. These parcels have a Just Value of approximately \$564,304,219, or 89.6% of the Just Value of all of the Navarre Beach area.

There are 1,023 identified parcels of land in the unincorporated areas that lie within the Category Five storm surge zone. These parcels have a Just Value of approximately \$564,304,219 or 89.6% of the Just Value of all of the Navarre Beach area.

Storm surge vulnerability for the Navarre Beach area is summarized in the following table:

Flood Type	Number of Parcels	Percentage Total Parcels	Just Value (Fair Market)	Percentage Total Just Value (Fair Market)
<b>1</b>	206	19.7	\$207,447,941	32.9
<b>2</b>	601	57.6	\$386,972,322	61.4
<b>3</b>	988	94.7	\$555,265,328	88.1

Flood Type	Number of Parcels	Percentage Total Parcels	Just Value (Fair Market)	Percentage Total Just Value (Fair Market)
4	1,018	97.6	\$564,304,219	89.6
5	1,023	98.0	\$565,028,146	90.0
<b>TOTAL<sup>4</sup></b>	<b>1,023</b>	<b>98.0</b>	<b>\$565,028,146</b>	<b>90.0</b>

When data storm surge data is coupled with existing and future land use categories for Navarre Beach, one gets a clearer idea of specific sectors of the community that could be the most impacted by increasing degrees of storm surge activity. For the purposes of this section, Just Values were correlated with storm surge zones by utilizing GIS technology. The parcels were then categorized and placed in the following table for better analysis based upon the land use classification scheme used by the Santa Rosa County. The table below is based upon existing land use classifications and lists all uses applicable to the Navarre Beach area, including:

	Category 1	Category 2	Category 3	Category 4	Category 5
Condo/Townhome	\$6,782,132	\$15,011,458	\$43,978,985	\$45,990,801	\$45,990,801
Commercial	\$0	\$3,843,348	\$14,885,567	\$14,885,567	\$14,885,567
Multi-Family Res. 2	\$0	\$0	\$162,745	\$162,745	\$162,745
Mixed Use	\$0	\$183,056	\$183,056	\$183,056	\$183,056
Office	\$0	\$186,458	\$186,458	\$186,458	\$186,458
Public-Owned Property	<b>\$181,591,791</b>	<b>\$363,119,592</b>	<b>\$364,153,672</b>	<b>\$364,153,672</b>	<b>\$364,153,672</b>
Rec./Open Space	\$6,502	\$32,010	\$40,512	\$40,512	\$40,512
Single-Family Residential	\$7,281,776	\$33,492,799	\$74,611,266	\$76,593,383	\$76,593,383
Vacant	\$9,326,409	\$28,475,314	\$48,869,001	\$52,185,911	\$52,634,011

**Note:** The values expressed in **yellow** indicate the highest categorical values per storm surge.

Based upon the data above, Public Owned Property composes the highest Just Value category for threat under a Category One storm surge (and all surge categories) Navarre Beach at \$181,591,791. The second and third largest land uses vulnerable under this surge category include Vacant (\$9,326,409) and Single Family Residential (SFR) properties (\$7,281,776), respectively. Also, it should be noted that Condo/Townhome land uses are a close fourth behind SFR uses.

Public Owned Property also composes the largest amount of territory under threat from a Category Two storm surge with a Just Value of \$363,119,592. The second and third largest land use categories falling within this surge category include Single Family Residential (\$33,492,799) and Vacant (\$28,475,314) uses, respectively.

<sup>4</sup> Category Five (5) storm surge amounts were used for the total because the boundaries of all other storm surge zones and applicable parcels are all spatially located within the Category Five. These totals represent the maximum damage foreseeable due to storm surge activity. This methodology was chosen to prevent overlap of data and skewing results.

Under a Category Three surge event, Public Owned Property (\$364,153,672) again is the largest sector of land use hit the hardest. Similar to the Category Two surge event, Single Family Residential (\$74,611,266) and Vacant (\$48,869,001) uses compose the second and third largest categories affected by this level of surge, respectively.

When analyzing vulnerability during a Category Four surge event, one finds a similar pattern emerging throughout all categories. Public Owned Property, again, composes the largest area of affected land (\$364,153,672) during this level of surge event. Single Family Residential is the second largest category with a Just Value of \$76,593,383 and Vacant properties the third largest with a Just Value of \$52,185,911.

Finally, under a Category Five event, the largest land use affected is Public Owned Land (\$364,153,672). Ranking second is Single Family Residential with a Just Value of \$76,593,383. Ranking third are Vacant properties with a Just Value of \$52,634,011.

Using the same methodology as above, future land uses were analyzed by category of storm surge vulnerability. The table is as follows:

	<b>Category 1</b>	<b>Category 2</b>	<b>Category 3</b>	<b>Category 4</b>	<b>Category 5</b>
Conservation/Recreation	<b>\$121,098,528</b>	<b>\$183,750,382</b>	<b>\$186,603,207</b>	<b>\$186,603,207</b>	<b>\$262,366,368</b>
Commercial	\$0	\$62,332,940	\$72,971,426	\$72,971,426	\$72,971,426
High Density Residential	\$3,819,323	\$6,536,013	\$8,500,602	\$9,634,992	\$14,718,075
Low Density Residential	\$784,747	\$28,033,658	\$74,503,196	\$81,526,764	\$141,778,593
Medium Density Residential	\$19,103,349	\$42,211,179	\$44,538,074	\$44,538,074	\$165,926,314
Medium/High Density Residential	\$0	\$0	\$30,414,402	\$30,414,402	\$30,414,402
Mixed Residential/Commercial	\$0	\$0	\$4,452,993	\$4,452,993	\$64,962,260
Utilities	\$60,509,267	\$60,509,267	\$60,509,267	\$60,509,267	\$123,147,217
Unknown	\$0	\$0	\$0	\$0	\$73,370,586
Water	\$0	\$0	\$0	\$0	\$1,112,306

**Note:** The values expressed in **yellow** indicate the highest categorical values per storm surge.

Based upon data for Future Land Use, Conservation/Recreation composes the highest Just Value category for threat under a Category One storm surge (and all surge categories) Navarre Beach at \$121,098,528. The second and third largest land uses vulnerable under this surge category include Utilities (\$60,509,267) and Medium Density Residential properties (\$19,103,349), respectively.

Conservation/Recreation also composes the largest amount of territory under threat from a Category Two storm surge with a Just Value of \$183,750,382. The second and third largest land use categories falling within this surge category include Commercial (\$62,332,940) and Utilities (\$60,509,267) uses, respectively.

Category Three and Four surge events showed remarkable similarity in the amounts of vulnerability each one is susceptible to. Each category had mirrored values per land use category except High Density Residential and Low Density Residential. Conservation/Recreation (\$186,603,207) again is the largest sector of land use

vulnerable. Low Density Residential (\$81,526,764) and Commercial (\$72,971,426) uses compose the second and third largest categories affected by this level of surge, respectively.

Finally, under a Category Five event, the largest land use affected is Conservation/Recreation land (\$262,366,368). Ranking second is Low Density Residential with a Just Value of \$141,778,593. Ranking third are Utilities properties with a Just Value of \$123,147,217. In this category, there also a number of Unknown and Water land uses that are not present in the aforementioned categories.

In summary, when analyzing all categories of storm surge, the most obvious existing land use categories to be vulnerable to storm surge are Vacant lands, Single Family Residential, Public Owned Properties, and Condo/Townhome uses. However, Single Family Residential and Condo/Townhome land uses would necessitate the most attention for mitigation being that it is the only category of the four that involves human settlements and the built environment.

When examining future land use versus the 5 categories of storm surge in Navarre Beach, the primary categories that appear to be the most vulnerable are Conservation/Recreation, High and Low Density Residential, Commercial and Utilities. It should also be noted that the above values were for a heavily developed area of condominium and single-family homes; thus the high values and heavy weighting towards more residential uses.

### ***5.5.E Land Erosion***

Santa Rosa County's topography and coastline lends itself to some land erosion vulnerabilities. Most commonly, erosion is associated with sandy sedimentation on streets, stormwater systems, and ponds or rivers and creeks. Erosion is most often caused by construction activities (opening of soft sandy soils) to rain events (leading to sedimentation transport on slopes). Also, coastal areas are subject to erosion from storm surge and coastal storms.

It is rare for structures to be impacted by such stormwater erosion, but it is not unheard of. More often, roadways, drainage systems, and natural creeks and water bodies are the recipients of sedimentation problems. Most structures with stormwater-induced erosion can trace the problem to development design problems related to construction of the structure itself, or to overall stormwater management systems in a neighborhood or area.

Coastal erosion, on the other hand, can be a severe problem. Waterfront structures and infrastructure can receive severe if not devastating degrees of erosion. Many of the issues surrounding such erosion are storm surge and hurricane related, and the vulnerability to this hazard is covered in appropriate descriptions of storm surge above.

Erosion management in Santa Rosa County is accomplished in a variety of ways. This includes coordination with engineering departments, the Natural Resource Conservation Service, the Florida Division of Forestry, private landowners and developers, and other

parties. A primary means used to control unwanted erosion include screening and hay baling on and near construction sites. Large-scale engineered systems also control erosion, generally through the management of stormwater flow and retention. Santa Rosa County has also implemented a number of multi-million dollar programs to control stormwater and sedimentation problems. Stormwater retention ponds, now required in virtually all new developments, have greatly reduced problems of erosion and stormwater runoff once construction is completed.

Mitigation measures are generally considered regulatory. However, erosion issues not yet identified could require public expenditure and grant applications to relieve erosion, probably related to stormwater management activities where development occurred before current new development regulations were adopted in building and planning codes.

### ***5.5.F Severe Storms***

A vulnerability to severe storms is present throughout unincorporated Santa Rosa County. The risk assessment of this plan identifies tornadoes, waterspouts, severe thunderstorms, lightning, winter storms, heat and drought as possibilities in the area.

Vulnerability is simply through presence. All structures and infrastructure are vulnerable to severe weather in Santa Rosa County.

Tornadoes and waterspouts are virtually impossible to predict (in terms of exact location of formation and path), although technologies such as Doppler Radar are enabling weather forecasters to give accurate warnings during formation and identification of an event. Aside from strong building codes (generally developed around the premise of hurricane mitigation and protection), vulnerability to these events will always be present and difficult to mitigate against.

Thunderstorms and lightning damage can be prevented. Existing and strengthened building codes (usually under consideration to prevent hurricane damage) will provide strength against severe thunderstorm events (especially high winds and hail). Lightning damage is preventable when proper electrical grounding, following building and fire codes, will also prevent damage. Electronic equipment is highly vulnerable to lightning strikes. Good common sense and planning by those using such equipment can prevent or reduce damage due to lightning events.

Winter storm vulnerability is possible in Santa Rosa County. The most likely location of winter weather events is generally considered to be north of Interstate 10. This demarcates a line north of the warmer waters of the Gulf of Mexico's and inland bay's warming effects. Still, the greatest vulnerabilities would be ice accumulation on bridges, ice on electrical lines, and loss of electricity. All residents, business and governmental organizations would be vulnerable. Severe cold can also cause strains on the electrical generation system (provided by Gulf Power Company and the Escambia River Electric

Cooperative). Loss of electrical power due to high demand could cause problems for vulnerable populations (especially the elderly).

Similarly, heat waves may cause excessive demand on electrical systems. Air conditioning is a given for most residents. Loss of the ability to cool air in a heat wave could mean the possibilities of opening shelters for vulnerable populations. Although all residents and businesses are vulnerable to heat waves, air conditioning generally mitigates the issue.

Drought can cause water use restrictions, but does not mean that water is unavailable in the area. Water is delivered in a variety of ways to unincorporated residents and businesses. A majority of locations outside of Blackwater River State Forest in unincorporated areas are delivered water through a number of privately owned water systems. Also, municipalities deliver water to locations outside of their Cities in some cases (especially near Milton). Santa Rosa County provides public water to Navarre Beach. Residents near and within Blackwater River State Forest and in some other remote locations of the County utilize individual private well systems for potable water supplies.

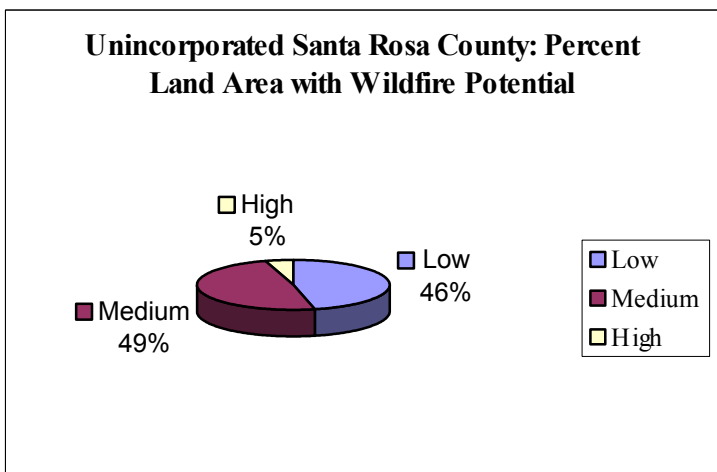
All water is withdrawn via ground water well systems from an aquifer with abundant water resources. Drought can lead to firefighting difficulties (analyzed under wildfire vulnerability assessments).

In all cases, loss of commercial grid electricity is the primary vulnerability for the area. Without a source of electricity, cooling, heating, communications and water supplies cannot be assured.

#### **5.5.G Wildfire**

Unincorporated Santa Rosa County is vulnerable to approximately \$7,373,953,978 (Just Value) in damages due to wildfire events. Similar to the hurricane data provided above, the data used in this section was obtained from MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System); an experimental web based system that allows emergency managers to easily access a variety of hazard related data.

Using the same methodology as the analysis on the above sections, GIS data depicting wildfire vulnerability were overlaid upon tax parcels whereby values for damage could be assessed. The result of the analysis indicates forty nine percent of the land area in the unincorporated county is vulnerable to medium potential for wildfire (See Figure 4). Subsequently, forty six percent is



considered to be low potential and five percent considered high.

Similar to the section on the City of Milton, Future Land Use data is available for the unincorporated county. In addition, Existing Land Use data is also available, allowing for a clearer picture of what land uses that are on the ground today are vulnerable to wildfire. Coupling this land use data with the wildfire information, wildfire vulnerability by land use can be forecast. The summary of Existing Land Use versus wildfire potential is offered in the table below:

**Figure 4: Wildfire Potential in Unincorporated Santa Rosa County.** Source: [www.mangaz.com/lmsmaps](http://www.mangaz.com/lmsmaps)

	Low Potential	Medium Potential	High Potential
Agriculture	\$93,498,132	\$116,848,881	\$21,156,960
Agr./Homestead	\$61,745,977	\$74,194,671	\$8,044,489
Condo/Townhome	\$4,332,556	\$28,333,077	\$2,710,180
City	\$354,562,800	\$534,494,042	\$285,360,492
Commercial	\$96,234,773	\$124,928,703	\$29,136,731
Industrial	\$23,077,058	\$32,846,341	\$22,878,218
Institutional	\$61,352,077	\$83,534,609	\$21,774,720
Multi-Family Res. 1	\$12,606,847	\$13,085,344	\$1,979,146
Multi-Family Res. 2	\$8,718,918	\$32,909,566	\$3,109,991
Military	\$149,002,925	\$152,623,443	\$1,409,791,470
Mixed Use	\$2,250,458	\$3,735,311	\$266,307
Office	\$15,853,192	\$31,639,112	\$9,691,220
Public-Owned Property	\$504,007,408	\$516,198,188	\$197,750,845
Rec./Commercial	\$35,240,903	\$46,587,783	\$109,832,819
Rec./Open Space	\$50,332,669	\$55,392,438	\$8,749,326
Right-of Way	\$220,663,764	\$531,198,292	\$201,508,604
Single-Family Residential	\$637,787,211	\$1,870,636,150	\$314,739,016
Silviculture	\$6,243,284	\$9,902,734	\$2,221,560
Unknown	\$2,120,652	\$6,974,730	\$360,701
Utility	\$3,731,463	\$6,011,227	\$2,969,303
Vacant	\$318,478,536	\$631,501,101	\$88,737,536
Water	\$1,501,646	\$5,854,458	\$815,425

**Note:** The values expressed in yellow indicate the highest categorical values per potential risk.

Out of all three categories of wildfire potential, Single Family Residential leads with the largest Just Value amounts for both Low and Medium wildfire potential. Military land uses rank highest for high potential of wildfire vulnerability. Other categories that also generally ranked highest out of all three categories and should also be acknowledged for mitigation would include City, Public Owned Property, and Single-family Residential.

Generally, the amount of wildfire vulnerability for applicable Future Land Use categories is highest among City land uses. However, Single Family Residential is the most



vulnerable analyzing both low and medium potential wildfire categories in terms of monetary damage. A summary of Future Land Use and vulnerability potential is summarized below:

	Low Potential	Medium Potential	High Potential
Agriculture	\$442,931,824	\$467,343,038	\$19,294,028
City	\$693,657,540	\$542,257,770	\$193,927,218
Commercial	\$241,236,744	\$282,358,832	\$28,515,370
Conservation/Recreation	\$78,546,886	\$79,151,637	\$17,438,079
Garcon Point Rural Residential	\$41,418,890	\$58,269,542	\$342,920
Garcon Point Single Family Residential	\$74,269,581	\$97,704,049	\$1,295,754
Bagdad Historical	\$5,117,932	\$5,622,614	\$1,697,707
Industrial	\$88,727,938	\$83,719,548	\$39,679,470
Marina	\$1,141,404	\$1,280,765	\$0
Military	\$137,880,274	\$68,009,916	\$92,056,477
Mixed Res./Comm.	\$183,775,448	\$311,889,486	\$99,685,857
Navarre Beach Commercial	\$2,801,846	\$0	\$0
Navarre Beach High Density Residential	\$9,320,434	\$0	\$0
Navarre Beach Low Density Residential	\$83,385,614	\$32,196,605	\$0
Navarre Beach Medium Density Residential	\$470,807,170	\$426,996,715	\$0
Navarre Beach Med./High Density Residential	\$23,628,160	\$8,762,758	\$0
Navarre Beach Mixed Res./Comm.	\$4,452,993	\$782,040	\$0
Navarre Beach Utilities	\$0	\$0	\$0
Rail	\$193,885	\$117,807	\$0
Residential	\$139,153,009	\$174,002,301	\$7,672,128
Single Family Residential	\$1,401,309,111	\$1,738,769,208	\$190,255,754
Water	\$8,634,727	\$10,035,289	\$531,664
Unknown	\$499,259,160	\$593,197,255	\$50,418,266

**Note:** The values expressed in yellow indicate the highest categorical values per potential risk.

### 5.5.H Other Hazards

The location of dams is equally important to community safety and mitigation planning. FEMA and DMA2K documentation acknowledge dam safety as being a necessary component of sound mitigation planning. Santa Rosa County has 56 registered dams in the county (incorporated and unincorporated areas). Out of these, 5 did not have coordinates for mapping and thus could not be included in this study. This brings the total to 51 dams to that are included in this study. Of the 51 dams, 4 require mitigation attention. The Northwest Florida Water Management District (NFWMD) has a permit system that allows registration and tracking of all dams in the county. The specific dams and their respective vulnerability are below:

Permit Number	Date of Issue	Flood	Flood and Surge
44-85-011	3/11/1985		X
44-86-029	6/18/1986	X	
44-88-007	11/4/1987		X
44-94-034	5/31/1994		X



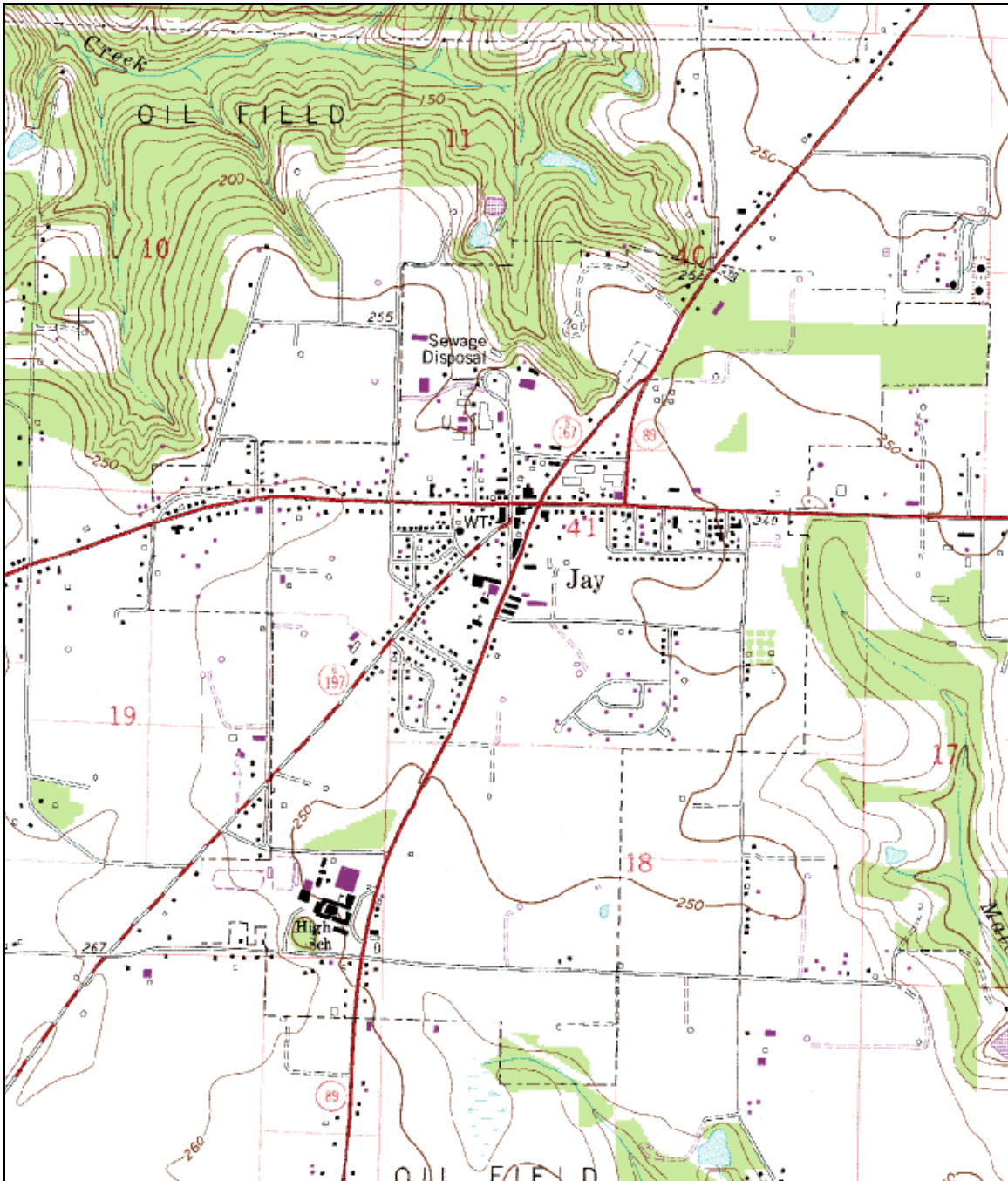
It is believed that dams are not vulnerable to wildfire events and have not been included in this study. Moreover, as stated above, hurricane winds affects the entire county, so all dams are vulnerable to high wind velocity by default. As noted above, there is one dam vulnerable to solely flood events, while the other three are vulnerable to both surge and flood. This information was obtained by overlaying GIS layers for flood and surge over dam locations and extracting those dams that would be vulnerable.

In addition to dam safety, highly erodible soils have been identified as being a potential threat to structures throughout the county. However, for the purposes of this plan, highly erodible soils are not considered much of a hazard threat as much as a threat *resulting from* a hazard event; typically due to wind, flood, or surge events. Hence, the inclusion of said data in this final section. The data below represents information for the entire county (both incorporated and unincorporated areas). For the purposes of this plan, only “Highly Erodible Soils” will be considered in estimating vulnerability.

Santa Rosa County is vulnerable to approximately \$497,878,280 (roughly 5,060 parcels) in damages from highly erosive soil conditions. This just value amount is reflecting upon 6.0% of all parcels in the county. By examining the map, it is evident that the overwhelming majority of the erosive soils exist in primarily rural areas, encompassing parcels of wide spatial extent.

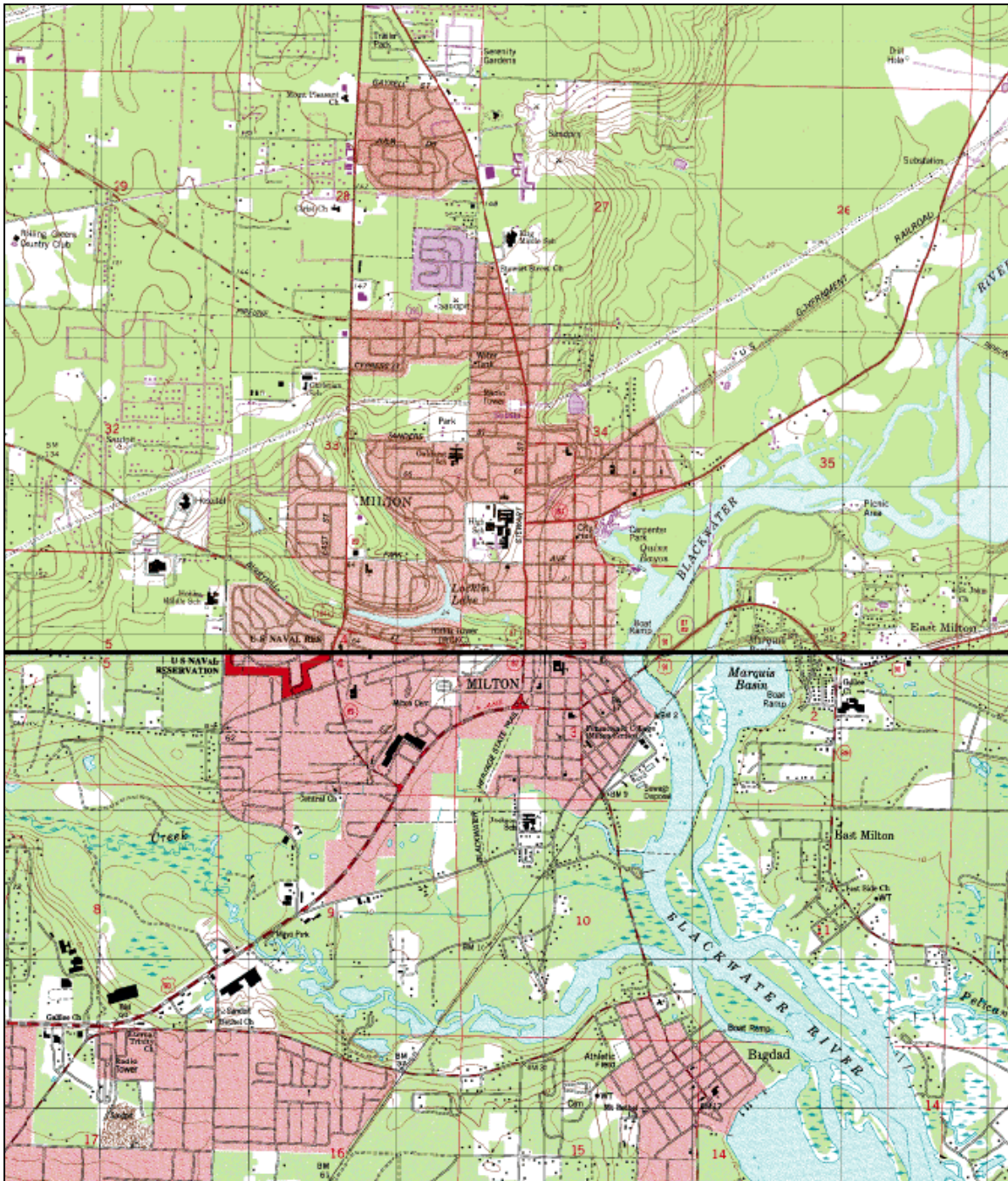


Map 5-1 - USGS Topographic Map of the City of Gulf Breeze and surrounding environs.  
Source: U.S. Geological Survey



Map 5-2 - USGS Topographic Map of the City of Jay and surrounding environs. Source: U.S. Geological Survey





Map 5-3 - USGS Topographic Map of the City of Milton and surrounding environs.  
Source: U.S. Geological Survey

**Santa Rosa County**  
**Local Mitigation Strategy (LMS) Plan**

**Section Six**

**Goals, Mitigation Actions, Initiatives, and Update Procedures**

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**6.1    Introduction**

This section of Santa Rosa County Local Mitigation (LMS) Plan contains the compilation of the proposed mitigation initiatives that are the result of the earlier planning efforts by the Task Force. This compilation serves to fulfill the requirements of 44 CFR Parts 201 and 206 Interim Final Rule in accordance with the Disaster Mitigation Act of 2000 (DMA2K).

The compilation is provided in four sub-sections to directly address the four criteria listed in §201. 6(c)(3):

- 1) **Local Hazard Mitigation Goals:** As directed in §201.6(c)(3)(i), this subsection shall include..."a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards."
- 2) **Identification and Analysis of Mitigation Actions:** As directed in §201.6(c)(3)(ii), this subsection shall..."identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing building and infrastructure."
- 3) **Implementation of Mitigation Actions and Multi-jurisdictional Mitigation Actions:** As directed in §201.6(c)(3)(iii), this subsection shall..."include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs." As directed in §201.6(c)(3)(iv) and pertaining to the multi-jurisdictional aspects of this plan (i.e. the inclusion of the County and its municipalities), this subsection shall..."include identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan."

**6.2    Local Hazard Mitigation Goals**

The following goals are the broad range vision of what is to be accomplished during the five-year planning period from 2005 through 2010 by the LMS Steering Committee:

- ***Goal 1 – Continually provide mechanisms for local government jurisdictions and the public to accomplish mitigation activities in Santa Rosa County.***

Accomplish by:

- Maintain bylaws that define membership and public participation methods.
  - Holding regularly scheduled LMS Steering Committee and Working Committee meetings. Steering Committee meetings will be held quarterly at minimum.
  - Forming Working Groups for sub-regions, municipalities, or for specific hazards named in the plan to reduce or eliminate vulnerability.
  - Maintaining a staffing presence to the LMS Steering Committee through contract or through staff hire or appointment.
  - Providing communications to county and municipal contacts and through media outlets to advertise opportunities to attend and participate in mitigation functions, consistent with the Florida Sunshine Law.
  - Holding meetings throughout the County and in various municipalities to encourage local participation.
- **Goal 2** – *Maintain communication between the LMS Steering Committee and key County and Municipal departments to coordinate intra- and inter-departmental mitigation activities among various jurisdictions, and with the public.*

Accomplish by:

- Ensuring all interests of various departments are represented by the appointed staff to the Steering Committee
  - Ensuring all interests are aware of Working Groups and a need to represent their own interests concerning various geographical areas or to address various hazards.
  - Maintaining up-to-date e-mail and postal addresses and phone numbers to ensure communication.
  - Establishing a website on the County's web server that discusses the LMS program.
- **Goal 3** – *Update the LMS plan, as necessary, to identify changes to hazards, vulnerability, goals, initiatives/priorities accomplishments/withdrawal/additions/pending, update of funding sources, current disaster declarations, and adoption of revisions.*

Accomplish by:

- Having the Steering Committee direct staff to update plan sections, tables, maps, etc., based upon current activities, trends, or issues.
  - Providing LMS staff feedback that provides localized information that is current.
  - Continually reviewing the plan and comparing it to other planning requirements (emergency management plans, comprehensive land use plans, community rating system plans) that contain mitigation provisions or may otherwise help to assert or hinder mitigation initiatives.
  - Notifying staff to the committee regarding issues that arise that may need their consideration or to solicit opinion.
  - Identifying and documenting potentially new hazards, including technological and homeland security issues not otherwise analyzed as a result of DMA2K.
- **Goal 4** – *Assist property owners, residents, businesses, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests.*

Accomplish by:

- Working with existing programs within the County and Municipalities (building inspections, local Community Rating System/National Flood Insurance Program, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.
  - Being perceptive of and proactively engage new opportunities to promote mitigation interests.
  - Developing a website that conveys updated information about mitigation activities on a continual basis.
  - Staying abreast of available funding and service opportunities through participation in meetings, conferences, seminars, and research.
  - Maintaining initiatives/priorities and contact persons lists to facilitate rapid notification of assistance availability.
- **Goal 5** – *Reduce or eliminate hazards identified to at risk locations in the County and its municipalities.*

Accomplish by:

- Targeting mitigation efforts and activities towards areas where hazards exist.
- Working with agencies, professionals, and the public to develop the best solutions for identified hazards.
- Examining and implementing appropriate technologies to identify, model, or otherwise simulate risks and zones of risk and incorporating these into the LMS plan.

### **6.3     Identification and Analysis of Mitigation Actions**

Each of the hazards identified has various ways and methods of mitigation. Chapter 4 of this plan demonstrates that a wide variety of hazards and risks exist throughout the County and in its municipalities. Chapter 5 provides an analysis of the potential for damages to community-wide infrastructure (including public and private sector interests). This section of the Local Mitigation Strategy Plan discusses the types of known mitigating actions that can be taken to reduce or eliminate future losses throughout Santa Rosa County. The mitigation actions suggested here are not exclusive, but instead should be viewed as a means of stimulating thought and creativity towards creating a more disaster-resistant community.

Readers should keep in mind that this section provides a broad set of ideas and recommendations, not specific ideas to individual sites impacted by currently pending, past, or anticipated disasters. Readers are encouraged to become familiar with Section 6.4 of this document in order to identify and nominate locations and projects that are specific and recommend ways to specifically mitigate a problem.

#### **6.3.A. Hurricane/Tropical Storm**

The current LMS planning process was initiated prior to the landfall and subsequent impact of **Hurricane Ivan** on September 15-16, 2004. Santa Rosa County, Gulf Breeze, Milton and Jay were all severely impacted by this Category 3 hurricane. At the time of

this writing, massive recovery efforts are underway. All aspects of these communities were impacted. Homes, businesses, governmental buildings, schools, roadways, waterways, recreational facilities, and natural amenities were all heavily impacted.

Hurricane Ivan has made it both easy and difficult for this plan to identify means of mitigation against future hurricane impacts. Much of what would have been included in this plan has been previously documented in many ways because of past hurricane strikes. However, no hurricane has created such a massive impact to the area since 1928. In 1928, Santa Rosa County had a population of approximately 25,000 people and little coastal development. Hurricane Erin (1995) demonstrated the County's vulnerability to winds reaching near 100 MPH (with particular emphasis on loss of energy, road blockage, and debris impact). Hurricane Opal (1995) demonstrated coastal vulnerability due to a massive storm surge, especially near Navarre Beach. Hurricane Ivan took both of the demonstrations of Erin and Opal and combined these problems into a single, large-scale event.

For the purposes of this section of the LMS Plan, Hurricane Ivan provides a recent insight to what hurricanes can do to the area. Prior to Hurricane Ivan, the LMS Committee would developed an analysis of impact and potential mitigation actions mostly based upon knowledge obtained from Hurricanes Erin and Opal of 1995, and to a lesser extent earlier storms that had occurred during the past one hundred years. This plan now has a vivid reminder of how vulnerable the community truly is (both inland and coastal) to major hurricanes (Category 3-5).

The following are the primary methods of mitigation that could reduce the impacts of hurricane impacts to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Building Construction and Flooding** – Ensure all future buildings are constructed to Florida Building Code standards and are built above the established base flood elevations, or BFE's, whether for zones impacted by moving water (velocity or "V" zones or floodways on Flood Insurance Rate Maps or FIRMS) or by rising water (such as "A" and "B" zones on FIRMS).
- **Flood Mapping** – Ensure that maps accurately reflect the amount of surge, wave and flood action that can occur during a major hurricane.
- **Flood Category Mapping** – Ensure that various types of flooding documented by a variety of sources (storm surge due to being wind driven, fetches within bays and sounds, riverine flooding, and low area/basin flooding) are all documented and that the public are aware of the existence of such mapping services and products for planning purposes.
- **Coastal Bridge and Highway Construction** – Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected.
- **Building Construction and Wind** – Ensure that all new buildings and permitted rehabilitations/additions are secure in terms of wind resistance and shuttering per mandates of the Florida Building Code.
- **Existing Building Mitigation in Flood-Prone Locations** – Provide opportunities for property owners to elevate existing structures, move them to higher ground, or



to have properties purchased by local governments in order to reduce overall community vulnerability to surge and flooding.

- **Availability of Public Sheltering** – Ensure adequate and safe public shelters are available in all locations in the County to prevent or reduce post-disaster homelessness, including adequate electrical supplies for cooking and to maintain sanitary conditions.
- **Structural Soundness of Existing Local Government Centers** – Promote and support funding that allows for buildings to remain functional before, during and after a hurricane event in order to support the function of Santa Rosa County Emergency Management’s mandates under Chapter 252 Florida Statutes. This includes support of the formation of municipal emergency operations centers and protection of both municipal and county infrastructure named in the County’s or a municipal Comprehensive Emergency Management Plan and its Emergency Support Functions (including first response entities and their supporting buildings).
- **Communications** - Ensure mitigation activities are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours following a disaster. Communications can include radio, television, telephone, internet, and all other means of communications systems.
- **Heavy Equipment** – Ensure adequate equipment exists to remove debris, clear roads, perform search and rescue functions, and otherwise respond and recover from hurricane impacts.
- **Public Agency Purchase of Undeveloped High Risk Flood/Surge Areas** – Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate.
- **Public Awareness** – Promote public awareness of hurricane hazards and ways that private structure owners and landowners can mitigate using governmental or private sector investment. Additionally, ensure that the business community is aware of the consequences of not mitigating businesses for hurricane impacts.

### 6.3.B. Flooding

As identified in Chapter 4, flooding can be experienced during hurricanes and tropical storm events. Concentration to identify and analyze methods of mitigation for flooding will be similar to recommendations that address flooding in Section 6.3.A., however this section also attempts to identify other areas that are specific to riverine, isolated basins, and dam safety.

The following are the primary methods of mitigation that could reduce the impacts of flooding impacts to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Building Construction and Flooding** – Ensure all future buildings are constructed to Florida Building Code standards and are built above the established base flood elevations, or BFE’s, whether for zones impacted by moving water (velocity or “V” zones or floodways on Flood Insurance Rate Maps or FIRMS) or by rising water (such as “A” and “B” zones on FIRMS).

- **Flood Mapping** – Ensure that maps accurately reflect the amount of surge, wave and flood action that can occur during a major hurricane.
- **Flood Category Mapping** – Ensure that various types of flooding documented by a variety of sources (storm surge due to being wind driven, fetches within bays and sounds, riverine flooding, and low area/basin flooding) are all documented and that the public are aware of the existence of such mapping services and products for planning purposes.
- **Bridge and Highway Construction** – Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected.
- **Existing Building Mitigation in Flood-Prone Locations** – Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to surge and flooding.
- **Critical Public Buildings Away From Floodplains and Flood-Prone Areas** – Ensure that all public buildings that serve first response and critical emergency/public needs, including record/data collection and communication centers/infrastructure, are located outside of flood zones or flood-prone areas.
- **NFIP and Community Rating System** – Support efforts to gain approval and/or to maintain status as CRS communities in all municipalities and the County.
- **Agricultural Flood Damage Prevention** – Support efforts of the Institute of Food and Agricultural Services (IFAS/County Cooperative Extension Service) and the Natural Resources Conservation Services (NRCS) as it relates to reduction and mitigation of flood hazards to crops and silvicultural operations.
- **Dam Safety** – Support efforts that document hazards and risks associated with structural and earthen dams and upkeep. Support efforts that create partnerships with property owners that promote the overall goal of community-wide and stream valley safety.

### 6.3.C. Land Erosion

As identified in Chapter 4, land erosion can be experienced during hurricanes and tropical storm events as well as over a long, almost imperceptible time frame. Once in motion, land erosion can be difficult to control. Both vegetative cover and structural controls are necessary to gain control of erosion. Even where no development is present, natural forces can erode vegetation and land away where high amounts of energy (i.e. waves and water) are present.

Since Hurricane Ivan, coastal erosion has emerged as a serious concern for coastal areas. This not only includes properties directly on the Gulf of Mexico, but also those on bays and sounds (due to high water and surge).

Additionally, soil erosion due to runoff, construction, agricultural/silvicultural operations, and along roadways slowly but surely creates sedimentation problems, gullies, and rills that can become problematic over time.

The following are the primary methods of mitigation that could reduce the impacts of land erosion impacts to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Vegetative Control** – Support efforts that protect natural plant systems, human plantings, special tilling methods and technologies, and other forms of vegetative erosion control.
- **Structural Control** – Support of mitigation efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary.
- **Construction and Infrastructure** – Support mitigation efforts that would allow for construction and infrastructure development to eliminate an existing erosion problem or to eliminate creation of such a problem.
- **Coastal Human-Induced Erosion** – Lend support to mitigation efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public.

#### 6.3.D. Sinkholes

Sinkholes are generally not experienced in Santa Rosa County. What are often called sinkholes are often sewer, storm drain, or water line failures underground that cause a human-created collapse.

The following are the primary methods of mitigation that could reduce the impacts of land erosion impacts to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Sinkhole Risk Assessment** – The LMS Committee supports research of the possibilities of natural sinkhole occurrence where a reasonable and realistic risk to the public is discovered and said research is considered vital towards local knowledge and understanding of the geology of the area.

#### 6.3.E. Expansive Soils

With only 1.6% of the County's soils at risk of being expansive against foundations and roadways (and with the majority of those soils being located in salt marshes which are already publicly owned), and with no records of such soils causing problems for buildings in the County and its municipalities, there is little that can be done to further mitigate construction in these areas.

The following are the primary methods of mitigation that could reduce the impacts of expansive soil impacts to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Expansive Soil Risk Assessment** – The LMS Committee supports research of the possibilities of expansive soil situations outside of locations already owned by public entities (such as the Northwest Florida Water Management District) where a reasonable and realistic risk to the public is discovered and said research is

considered vital towards local knowledge and understanding of the soils of the area.

### **6.3.F. Tornadoes and Waterspouts**

Because of the unpredictable nature of this weather feature, mitigation against tornadoes and waterspouts throughout Santa Rosa County is difficult at best. Unlike locations of the United States where underground shelters might be recommended on a routine basis, the ability to achieve a reasonable benefit-cost ratio with such actions is questionable throughout the County. Additionally, it is unlikely that underground shelters would even be feasible in many locations due to high water tables (one of the reasons that few buildings in the County have basements).

Fortunately, many of the same building codes and standards that are required for high wind protection in hurricanes lend considerable protection in most tornadoes and waterspouts. The likely best type of mitigation would be warning and communication systems, and protection within a building already meeting the Florida Building Code.

The following are the primary methods of mitigation that could reduce the impacts of tornado and waterspout impacts to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Communications and Warning Systems** – Ensure the public can be informed of pending conditions that would produce a tornado or waterspout, or otherwise warn the public that such an event was pending. Support mitigation activities that improve emergency management sponsored systems that coordinate such efforts with the County's and Municipal Warning System through its 911 program.
- **Public Education** – Support mitigation activities that help to educate the public about the dangers of tornadoes and waterspouts in the area and describe how to take protective actions in various situations. Such activities should be supported and coordinated with the County Emergency Management office.

### **6.3.G. Severe Thunderstorms and Lightning**

This common natural hazard and threat deserves attention, especially in terms of lightning and the risk it poses to structures and electrically sensitive equipment. There are many mitigation activities that can take place throughout any community that reduces the threat of electrical surges and discharges of lightning. Aside from the risk of equipment being struck, there is an ever-present risk of people being hit by lightning (especially given the amount of outdoor recreation --- such as golfing, boating, fishing, hunting, bicycling, swimming, or poolside --- occurring throughout the County and municipalities during warm weather months or during frontal passage when thunderstorms are most common).

Damaging winds and hail are generally mitigated through building codes that are already in place due to the overall risk of hurricanes in the area. It is difficult to mitigate personal property and livestock against hail unless said property can be immediately placed indoors (without risk of being struck by lightning while in the process of doing so).

The following are the primary methods of mitigation that could reduce the impacts of severe thunderstorms and lightning to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Communications and Warning Systems** – Ensure the public can be informed of pending conditions that would produce a severe thunderstorm, or otherwise warn the public that such an event was pending. Support mitigation activities that improve emergency management sponsored systems that coordinate such efforts with the County's and Municipal Warning System through its 911 program.
- **Public Education** – Support mitigation activities that help to educate the public about the dangers of severe thunderstorms and especially lightning in the area and describe how to take protective actions in various situations. Such activities should be supported and coordinated with the County Emergency Management office.
- **Secure Electronic and Electrically-Sensitive Systems** – Ensure that mitigation activities are supported that reduce the risk of loss of electronic equipment and structures due to lightning strike and electrical surge.

#### 6.3.H. Winter Storms

Because of infrequency, it is difficult to mitigate the impacts of winter storms in Santa Rosa County and its municipalities. There is little infrastructure in place to combat what may be the greatest winter risk... an ice storm with accompanying glaze. The most credible worst case scenario would be massive loss of the local and regional electric utility grid, the inability to keep buildings warm, and hardship in performing rescues on segments of the public most vulnerable to cold (such as the elderly, very young, and those who are ill). Much of the recovery effort would rest in the hands of private sector electrical service providers. The County and its municipalities have no salt spreaders, and only road graders are available that might be used to scrape snow or ice (and they have no chains or winter tires). The erratic occurrence of such events simply does not justify large or perhaps any public expenditure for equipment to remove winter precipitation, or extensive building codes to deal with such issues.

Back-up heating sources and availability of electrical generators are possible mitigative measures for some critical facilities. Back-up heating will usually consist of portable kerosene heaters or fireplaces. Natural gas and propane heating systems are good, but if an electrical blower is part of an overall heating system, without a generator there will be no ability to heat such facilities.

More realistically, the most common winter disaster in the area is a frozen pipe and sometimes subsequent flooding of the interior of a house or business. This can generally be mitigated by heating strips or by wrapping pipes with insulation... all commonly available products in local hardware and department stores. In a worst-case situation, a pipe may need to be relocated to a warmer part of a structure.

Agricultural interests are probably the most prepared segment of the County's population and business community for cold weather. Sensitive crops and animals are often supplied

with heat that mitigates the cold. Spraying of water and forming ice on some trees can insulate them from cold air damage. Animals can be brought into barns or in some cases have jackets placed on them. Most bear the cold well because the severity of cold in the area is simply incomparable to winter conditions hundreds of miles north of the County.

Public education about the risk of winter storms may be the most appropriate type of mitigation activity that can be provided and supported by the LMS Committee.

The following are the primary methods of mitigation that could reduce the impacts of winter storms to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Public Education** – Support mitigation activities that help to educate the public about the infrequent but possible risk of winter storms in the area.
- **Shelter Evaluation** – Ensure mitigation activities for shelters include an assessment of the availability of heating systems that could function in the event of an ice storm in the County, including the ability to generate electricity.
- **Public Building Preparedness** – Support mitigation activities that reduce or eliminate vulnerability to freezing (such as those that protect water pipes) or provide secondary heating or electrical systems for first responder or other vital emergency management functions.
- **Communications** – Ensure mitigation activities within communications systems to ensure capabilities to communicate during and following a winter storm (particularly relating to electrical systems).

### **6.3.I. Heat Waves and Drought**

The primary challenges to the County during a heat wave and drought is to ensure electrical service is maintained to run air conditioners, that adequate private sector air conditioning services are available to serve public and private buildings, and that water is available. In a drought, the challenge may simply be to monitor water supplies, to provide water as an emergency resource for critical situations, and to restrict use by the public, as appropriate.

Although not as critical as freezing conditions and the need for warmth and heating, air conditioning can be a critical need for some segments of the populations (elderly, very young, ill). Limited public sheltering might be necessary in extreme conditions, and the ability to provide cool air for those in need would be critical. This could point to the need for generators for a shelter that might be used in a heat wave.

Drain on the overall electrical system due to high demand might also impact emergency operations, especially as it relates to pumping water and communications. Again, electrical generators may be a key mitigation mechanism.

Agricultural interests are also at risk. With crops, there is little that can be done other than irrigate. Livestock and poultry must be watered (and drought can lead to a lack of feed supplies).

Public education about the hazards of heat and need to stay cool, hydrated, and at a pace of work that is sensible is a routine mitigation activity because of the warm climate. Most individuals living in the area are accustomed to living in a hot summer climate.

The following are the primary methods of mitigation that could reduce the impacts of severe heat and drought to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Public Education** – Support mitigation activities that help to educate the public about the infrequent but possible risk of heat wave and drought in the area.
- **Shelter Evaluation** – Ensure mitigation activities for shelters include an assessment of the availability of heating systems that could function in the event of an ice storm in the County.
- **Public Building Preparedness** – Support mitigation activities that reduce or eliminate vulnerability to freezing (such as those that protect water pipes) or provide secondary heating or electrical systems for first responder or other vital emergency management functions.
- **Communications** – Ensure mitigation activities within communications systems to ensure capabilities to communicate during and following a winter storm (particularly relating to electrical systems).
- **Agricultural Interests** - Support mitigative measures (with the advice of IFAS and the NRCS) that would identify public measures that would help agricultural, forestry, and aquacultural interests in the County.

### 6.3.J. Wildfire

Perhaps the second greatest natural hazard risk in the County (behind hurricanes) is wildfire. A dry weather pattern (even beginning a few days following a rain event when low humidity is achieved) can create a hazard that may threaten timberlands, grasslands, and developed areas. The natural vegetative ecology is fire dependant. Because of the interwoven pattern of development, vacant lots, timberlands, state forests, military reservations, national park areas, and pastures... and added to that the number of sources that can cause fires (catalytic converters, garbage burning, arson, campfires, lightning, etc.), the risk of wildfire the County and its municipalities is extraordinarily high during the right weather conditions.

Hurricanes (such as Ivan in 2004) can add leaves and wood to existing fuel on the forest floor. Debris can also ignite, spreading fires into locations that can quickly impact houses.

The LMS Steering Committee believes wildfire is as serious a threat as hurricanes to all areas of the County and its municipalities. Although damage is unlikely to be as widespread as a hurricane, it is possible that tens of thousands of residents and business could be impacted under the right conditions. Whole counties in other portions of Florida have had to evacuate due to massive fires, and similar conditions in Santa Rosa County could cause similar sized evacuations and disaster conditions.

The primary focus of mitigation activities should be public awareness and education, cooperative efforts and partnership building with the Florida Division of Forestry, and support of all of the County and municipal fire departments and their supporting agencies. There should be close correlation between planning activities and how development interfaces with rural, fire prone lands. The Division of Forestry has an excellent system of mapping the most fire prone locations that can be used by the County and its municipalities for planning and mitigation purposes. This interaction can assist in understanding the needs of local fire departments and water systems to assist in suppressing wildland fires.

The following are the primary methods of mitigation that could reduce the impacts of wildfire to Santa Rosa County and its municipalities and are supported by the LMS Steering Committee:

- **Public Education** - Support the activities of local fire departments and the Florida Division of Forestry in promoting “FireWise” programs, local inspections, and enforcement activities to reduce or eliminate wildfire risk.
- **Planning and Development** – Support activities that integrate wildfire mitigation techniques with design and review processes of subdivision plats to reduce risks to new communities through cooperative efforts between land planning offices, fire departments and the Florida Division of Forestry.
- **Mapping and Updates** – Support activities that newly document or update maps, aerial photography, or other remote sensing imagery that shows degrees of risk (Levels of Concern) for wildfire and utilize such data to focus mitigation activities against wildfire.
- **Fire Department Response Systems and Capabilities** – Ensure that fire stations and their supporting equipment and personnel are adequate in terms of size, modernization, communications, in order to respond to situations by mitigating situations that are below acceptable standards to fight wildfires throughout the County and to provide mutual aid support in neighboring jurisdictions or counties.
- **Water Supplies** – As appropriate, support public and private mitigation efforts to provide fire hydrants (pressurized) and dry hydrants (non-pressurized) to locations at risk along the urban/rural interface where water systems exist to provide such services.

#### **6.3.K. Other Hazards**

**Earthquake:** Earthquakes have been felt in recent years in the Jay area. These quakes have been centered about 15 miles northwest of Jay in Alabama along the Pollard Graben (a regional “stable” fault system). Although there is no specific documentation, oil extraction activities in the area may be the cause of the earthquakes.

At this time, the LMS Steering Committee is not supporting mitigation activities for earthquakes due to the infrequency, the small magnitude, and overall low risk of earthquakes to the County. This may be reconsidered should researchers (such as those from the U.S. Geological Survey) determine the risk is greater than what has been previously thought.



**Avalanche:** There is no risk of avalanche in the County. The LMS Steering Committee will not support mitigation activities for this hazard.

**Land Subsidence:** There is no risk of land subsidence in the County. The LMS Steering Committee will not support mitigation activities for this hazard unless documentation is provided that it is becoming an issue at some location within the County.

**Landslide:** Since there is virtually no risk of a landslide in the County, the LMS Steering Committee will not support mitigation activities for this hazard.

**Tsunami:** Due to the 2004 tsunamis in Southeast Asia, there is widespread concern in the United States about tsunami risk. Chapter 4 of this plan documents the tsunami risk for Santa Rosa County. Unless studies released by U.S. Government or other sources demonstrate that the County is at much greater risk than previous thought, the LMS Steering Committee will not support mitigation activities for this hazard.

**Volcano:** There is no risk of volcanic activity in the County. The LMS Steering Committee will not support mitigation activities for this hazard.

#### **6.4 Implementation of Mitigation Actions and Multi-jurisdictional Mitigation Actions**

*(See Appendix 6.4 for Initiatives/Priorities Listings)*

An Initiatives/Priorities list” for the County, Gulf Breeze, Jay, and Milton. These lists contain specifically identified potential projects and efforts identified by these local government jurisdictions and by the LMS Steering Committee that would be sanctioned as a mitigation project if approved by funding agencies or to demonstrate consistency with the goals of the Committee. The lists are considered “dynamic” and are subject to change. Each submittal of a newly proposed initiative, along with funding and completion of projects, causes the list to change.

**NOTE:** Parties responsible for applying for or otherwise acquiring funding for a potential mitigation project should clearly understand that federal mitigation dollars (such as the Hazard Mitigation Grant Program or HMGP, and the Pre-Disaster Mitigation grant program, or PDM – both provided by FEMA) are awarded *only* when an appropriate application is made for a given project and it appears on the current LMS “Initiatives/Priorities List”. Applications naming projects that are not approved to be on the Initiatives/Priorities List for the County will not be funded by FEMA.

The LMS Initiatives Lists are open to public nomination as well as LMS Committee member nomination. An “**Initiatives Nomination Form**” is available continually for use by all parties. This form provides a scoring system that documents how much mitigation activity might occur should a project be implemented. There is no score or mark that must be achieved before a form can be completed and turned into LMS Committee staff.

Once a form is provided to LMS Committee staff, staff members may contact the nominating party for additional information, particularly if there are gaps in the document (areas not completed or where “don’t know” is checked. Once the form is processed, a rough run of

FEMA's Benefit Cost Ratio software is made, if possible. The score and the ratio is then provided to the LMS Working Groups (as appropriate) and ultimately the LMS Steering Committee for approval and ranking.

The LMS Steering Committee has advised the entities submitting initiative(s) to individually internally rank each of their jurisdiction or public nomination initiative(s) being added to the Initiative List. The LMS Steering Committee, for approval and ranking, is recommending the following methodologies be used by committee to sort and determine the projects of greatest importance to their community:

- Hardening/Sheltering and Recovery Systems
- Safety/Health, including Sewer, Stormwater and Water Systems
- Other projects

Once the submitting body has ranked their projects internally, they are then brought to the LMS Steering Committee and the same methodology used in the internal ranking will be used to rank all the initiatives on the Initiative List.

The top ranking of a project does not necessarily mean that it will be approved and implemented "first". Funding sources, availability, and their rules and guidelines determine what might be funded. Those items at the top of the list eligible for a given source of funds to accomplish a mitigation initiative are to be accomplished first, according to the principles of the LMS Steering Committee.

Once a project is provided funds (whether from local revenue, grant or loan funds), the initiative is placed on an "in progress list" under the name of the given local government jurisdiction. Joint projects may appear on several lists at this stage to show what is being accomplished.

When a project is completed, it is placed in a table demonstrating its accomplishment, its cost, and a short description of what was achieved so that its history can be documented. Again, joint projects may appear several times, with funding amounts per jurisdiction documented.

## **6.5 Overall Plan Maintenance Procedures**

Florida Administrative Code Chapter 9G-22 requires each in Florida to maintain an active, functioning Local Mitigation Strategy Task Force. Officers must be assigned, including a Chairman and Vice Chairman. Recommendations are made in the Code that suggests certain community members, governments, and agencies be a part of the overall membership or involved in participation in the LMS process.

Additionally, Santa Rosa County and the Cities of Gulf Breeze, Jay and Milton have entered into a cooperative effort to participate together on the LMS Committee as a multi-jurisdictional effort. As referenced earlier in this plan, By-Laws are established and adopted that set forth a manner of overall participating by local government and community entities. By-Laws establish both the Steering Committee and a Working Group.

To insure the LMS mission is carried out to incorporate mitigation into the various avenues of advocacy, education and structural mitigation opportunities in Santa Rosa County, and the multi-

jurisdictions within the county, the need to integrate the LMS plan into Santa Rosa County's future and current-planning processes became apparent. One way to fulfill this need is to have the LMS plan included in Santa Rosa County Comprehensive Plan. Under current provisions each municipalities is required to have a Comprehensive plan, by this action the municipalities will also include the LMS plan into their respective jurisdictions Comprehensive Plan. This will accomplish the goal the committees voiced to have the LMS plan include in all of the Comprehensive plans within Santa Rosa County.

Staff services are provided to the LMS Committee through a private consulting firm named Ecology & Environment, Inc. (E & E). The local office of E & E is based in nearby Pensacola. Staff members from E & E are experienced in assisting the LMS process in Santa Rosa County and in other locales around the nation. Minutes of each meeting are collected by Santa Rosa County Clerk of Court staff.

A minimum of four meetings of the LMS Task Force per year are traditionally held by the Santa Rosa County LMS Task Force. More meetings are held as necessary. These meeting provide an opportunity to address outstanding issues, to update initiatives lists, and to review hazards and their impact on the County and its municipalities. Staff attends each meeting.

All records of the LMS Task Force are public records under Florida's Sunshine Law. They are open for public inspection. All meetings must be duly noticed through media outlets, e-mail, and postal mail. Staff is responsible for insuring press releases are issued and that mailings or electronic notification is provided. This enables public participation.

The public is encouraged to participate in LMS Steering Committee meetings. It is anticipated greater public participation will be encouraged through the establishment of a more consistent Working Group, as permitted in the By-Laws.

All of these mechanisms cause the County and its municipalities to continually attend to mitigation issues and opportunities. Staff's duties is to recognize when updates are necessary and to propose changes to the LMS Task Force, as necessary, at each LMS meeting. A rapport has already been established between staff and local governments, and citizen involvement has increased (particularly since the impact of Hurricane Ivan in September 2004).

Plan maintenance is a matter of maintaining consistency and embracing opportunities for change and improvement. Regular meetings, an active notification and communication system, commitment to staffing, a dedicated staff, and continual outreach for public participation are the strategies that will allow the LMS Plan to be a functioning, dynamic, and maintained document during the five year planning period from 2005 – 2010.

**Appendices**  
**2005-2010**  
**Local Mitigation**  
**Strategy Plan**



**A multi-jurisdiction mitigation plan for:**

**The City of Gulf Breeze**  
**The Town of Jay**  
**The City of Milton**  
**and**  
**Santa Rosa County, Florida**

*Produced by a cooperative effort through the*

**Santa Rosa County Local Mitigation Strategy Task Force**

*In cooperation with*



**ecology and environment, inc.**  
International Specialists in the Environment

220 W. Garden Street, Pensacola, FL 32501

## **RESOLUTION NO. 04-05**

### **A RESOLUTION TO BE ENTITLED:**

#### **A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GULF BREEZE, SANTA ROSA COUNTY, FLORIDA, TRANSMITTING THE LOCAL MITIGATION STRATEGY PLAN TO THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS REQUESTING REVIEW AND APPROVAL UNDER THE DISASTER MITIGATION ACT OF 2000**

WHEREAS, Santa Rosa County and the City of Gulf Breeze are subject to natural and man-made hazards including hurricanes, tornadoes, floods, fires, and chemical releases and faces potential damage to life, property, natural resources and the local economy; and

WHEREAS, the Local Mitigation Strategy Task Force, which consists of employees and community members of Santa Rosa County and the City of Milton, City of Gulf Breeze, and Town of Jay, is open for participation to any and all interested parties; and

WHEREAS, the Federal Emergency Management Agency has adopted the Disaster Mitigation Assistance 2000 Plan, ("DMA2K"), to enhance the quality of Local Mitigation Strategy Plans in all Government jurisdictions in the United States; and

WHEREAS, the Florida Department of Community Affairs has directed local governments to develop a DMA2K consistent plan throughout the state; and

WHEREAS, the Santa Rosa County Local Mitigation Strategy Task Force has redeveloped a plan consistent with DMA2K; and

WHEREAS, the Local Mitigation Strategy Task Force has identified those local hazards and has assessed countywide vulnerability and risk to those hazards; and

WHEREAS, the Local Mitigation Strategy Task Force has identified and prioritized mitigation initiatives that would reduce local vulnerability to these hazards; and

WHEREAS, initiatives identified on the Local Mitigation Strategy Plan Initiatives List are given more consideration by state-managed funding programs such as the Hazard Mitigation Grant Program, Public Disaster Mitigation Grant, Emergency Management Preparedness Assistance Trust Fund, Communities Trust, Community Development Block Grant, Coastal Partnership Initiative, and HOME; and

WHEREAS, the Local Mitigation Strategy Plan can serve as the Flood Mitigation Plan as required of all communities participating in the National Flood Insurance Program and seeking project funding from the Flood Mitigation Assistance Program; and

Resolution No.  
Page Two

WHEREAS, the Local Mitigation Strategy Plan can serve as the Post-Disaster Redevelopment Plan as required of all coastal counties in Florida by Florida Administrative Code rule 9J-5 as part of the County Comprehensive Growth Management Plan; and

WHEREAS, the Local Mitigation Strategy Plan is designed to be a process-oriented document with review and revision policies that allow the Local Mitigation Strategy Plan to be changed to meet new or changing conditions including hazard-event frequency, perceived local needs and funding opportunities,

NOW, THEREFORE, BE IT RESOLVED that Gulf Breeze City Council hereby transmits the Local Mitigation Strategy Plan to the Florida Department of Community Affairs, requesting review and approval under the Disaster Mitigation Act of 2000 so that the County may adopt a final approved version of the plan that will serve as the formal guide for Santa Rosa County's hazard mitigation activities from 2005 through 2010.

PASSED AND ADOPTED by the City Council of the Gulf Breeze, Santa Rosa County, Florida, on the 22<sup>nd</sup> day of February, 2005



CITY OF GULF BREEZE, FLORIDA

BY Jane Gilchrist  
MAYOR

ATTEST:

Marita Rhodes  
CITY CLERK

## **RESOLUTION NO. 2005-02**

**WHEREAS**, the Town of Jay is subject to natural and man-made hazards including hurricanes, tornadoes, floods, fires, and chemical releases and faces potential damage to life, property, natural resources and the local economy; and

**WHEREAS**, the Local Mitigation Strategy Task Force, which consists of employees and community members of Santa Rosa County and the City of Milton, City of Gulf Breeze, and Town of Jay, is open for participation to any and all interested parties; and

**WHEREAS**, the Federal Emergency Management Agency has adopted the Disaster Mitigation Assistance 2000 Plan, DMA2K, to enhance the quality of Local Mitigation Strategy Plans in all Government jurisdictions in the United States; and

**WHEREAS**, the Florida Department of Community Affairs has directed local governments to develop a DMA2K; and

**WHEREAS**, the Santa Rosa County Local Mitigation Strategy Task Force has redeveloped a plan consistent with DMA2K; and

**WHEREAS**, the Local Mitigation Strategy Task Force has identified those local hazards and has assessed countywide vulnerability and risk to those hazards; and

**WHEREAS**, the Local Mitigation Strategy Task Force has identified and prioritized mitigation initiatives that would reduce local vulnerability to these hazards; and

**WHEREAS**, initiatives identified on the Local Mitigation Strategy Plan Initiatives List are given more consideration by state-managed funding programs such as the Hazard Mitigation Grant Program, Public Disaster Mitigation Grant, Emergency Management Preparedness Assistance Trust Fund, Communities Trust, Community Development Block Grant, Coastal Partnership Initiative, and HOME; and

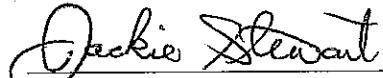
**WHEREAS**, the Local Mitigation Strategy Plan can serve as the Flood Mitigation Plan as required of all communities participating in the National Flood Insurance Program and seeking project funding from the Flood Mitigation Assistance Program; and

**WHEREAS**, the Local Mitigation Strategy Plan can serve as the Post-Disaster Redevelopment Plan as required of all coastal counties in Florida by Florida Administrative code rule 9J-5 as part of the County Comprehensive Growth Management Plan; and

**WHEREAS**, the local Mitigation Strategy Plan is designed to be a process-oriented document with review and revision policies that allow the Local Mitigation Strategy Plan to be changed to meet new or changing conditions including hazard-event frequency, perceived local needs and funding opportunities,

**NOW, THEREFORE, BE IT RESOLVED** that Town of Jay Town Council hereby transmits the Local Mitigation Strategy Plan to the Florida Department of Community Affairs, requested review and approval under the Disaster Mitigation Act of 2000 so that the County may adopt a final approved version of the plan that will serve as the formal guide for Town of Jay's hazard mitigation activities from 2005 through 2010.

**PASSED AND ADOPTED** this 7<sup>th</sup> day of February, 2005, by a vote of 5 yeas, 0 nays of the Jay Town Council of Santa Rosa County, Florida

  
\_\_\_\_\_  
Jackie Stewart, Mayor

ATTEST:

  
\_\_\_\_\_  
Linda Carden  
Town Clerk



APPROVING TRANSMITTAL OF THE LOCAL MITIGATION STRATEGY PLAN TO THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS, REQUESTING REVIEW AND APPROVAL UNDER THE DISASTER MITIGATION ACT OF 2000 SO THAT THE COUNTY AND CITIES MAY ADOPT A FINAL APPROVED VERSION OF THE PLAN THAT WILL SERVE AS THE FORMAL GUIDE FOR SANTA ROSA COUNTY'S HAZARD MITIGATION ACTIVITIES FROM 2005 THROUGH 2010

**WHEREAS**, Santa Rosa County is subject to natural and man-made hazards including hurricanes, tornadoes, floods, fires, and chemical releases and faces potential damage to life, property, natural resources and the local economy; and

**WHEREAS**, the Local Mitigation Strategy Task Force, which consists of employees and community members of Santa Rosa County and the City of Milton, City of Gulf Breeze, and Town of Jay, is open for participation to any and all interested parties; and

**WHEREAS**, the Federal Emergency Management Agency has adopted the Disaster Mitigation Assistance 2000 Plan, DMA2K, to enhance the quality of Local Mitigation Strategy Plans in all Government jurisdictions in the United States; and

**WHEREAS**, the Florida Department of Community affairs has directed local governments to develop a DMA2K consistent plan throughout the state; and

**WHEREAS**, the Santa Rosa County Local Mitigation Strategy Task Force has redeveloped a plan consistent with DMA2K; and

**WHEREAS**, the Local Mitigation Strategy Task Force has identified those local hazards and has assessed countywide vulnerability and risk to those hazards; and

**WHEREAS**, the Local Mitigation Strategy Task Force has identified and prioritized mitigation initiatives that would reduce local vulnerability to these hazards; and

**WHEREAS**, initiatives identified on the Local Mitigation Strategy Plan Initiatives List are given more consideration by state-managed funding programs such as the Hazard Mitigation Grant Program, Public Disaster Mitigation Grant, Emergency Management Preparedness Assistance Trust Fund, Communities Trust, Community Development Block Grant, Coastal Partnership Initiative, and HOME; and

**WHEREAS**, the Local Mitigation Strategy Plan can serve as the Flood Mitigation Plan as required of all communities participating in the National Flood Insurance Program and seeking project funding from the Flood Mitigation Assistance Program; and

**WHEREAS**, the Local Mitigation Strategy Plan can serve as the Post-Disaster Redevelopment Plan as required of all coastal counties in Florida by Florida Administrative Code rule 9J-5 as part of the County Comprehensive Growth Management Plan; and

**WHEREAS**, the Local Mitigation Strategy Plan is designed to be a process-oriented document with review and revision policies that allow the Local Mitigation Strategy Plan to be changed to meet new or changing conditions including hazard-event frequency, perceived local needs and funding opportunities,

**NOW, THEREFORE, BE IT RESOLVED** that City Council of the City of Milton hereby approves transmittal of the Local Mitigation Strategy Plan to the Florida Department of Community Affairs, requesting review and approval under the Disaster Mitigation Act of 2000 so that the County and cities may adopt a final approved version of the plan that will serve as the formal guide for Santa Rosa County's hazard mitigation activities from 2005 through 2010.

**PASSED AND ADOPTED** this 8<sup>th</sup> day of February, 2005, by a vote of 8 yeas, 0 nays, and 0 absent, of the City Council of the City of Milton, Florida.

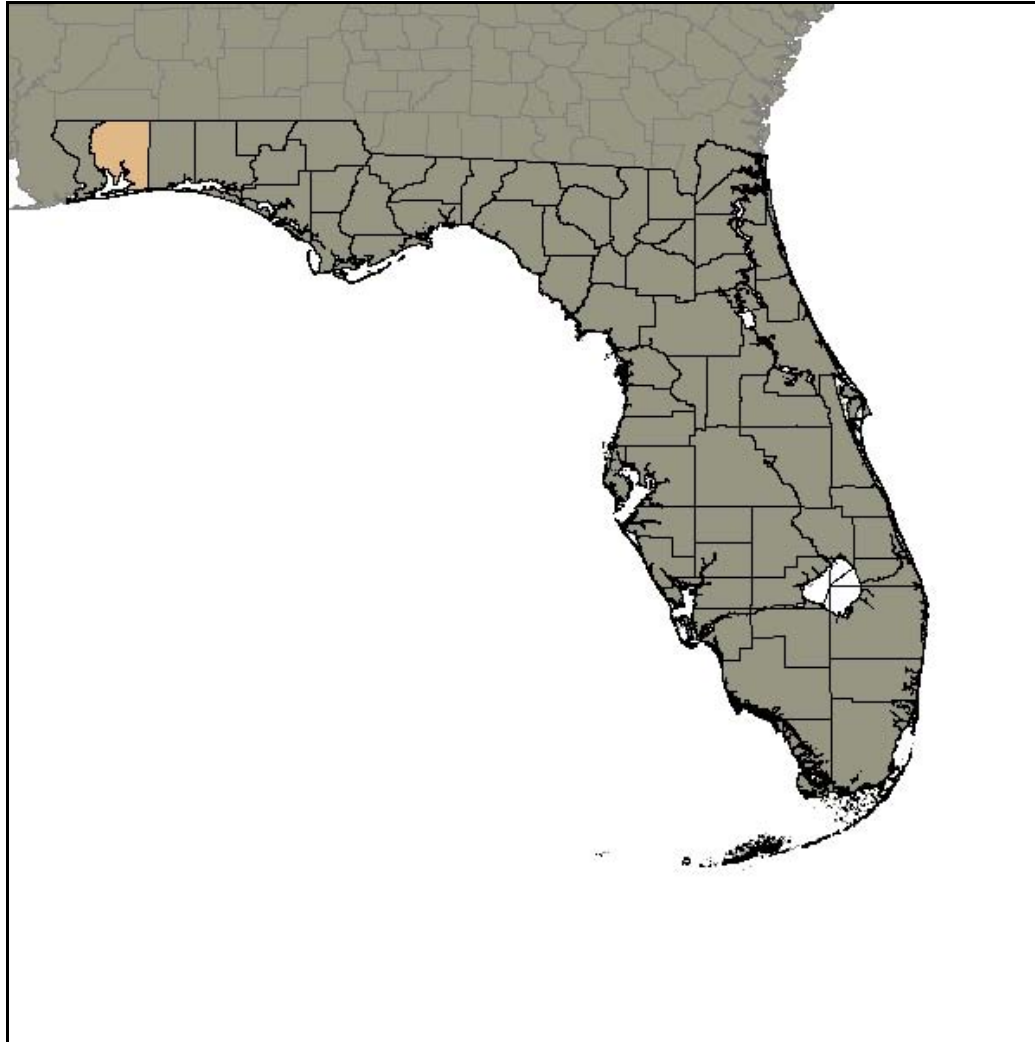
By: 

Mayor

ATTEST:

  
City Clerk

# Natural Hazards Assessment for SANTA\_ROSA County



Report to the State of Florida Division of Emergency Management

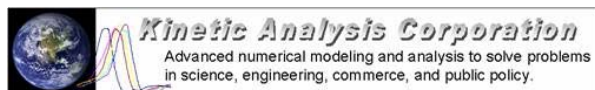
**Charles C. Watson Jr.**

**Mark E. Johnson**

*Kinetic Analysis Corporation*

*University of Central Florida*

Contract Number: 04HS-L+-12-00-22-267



**University of Central Florida**

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### Abstract

This report summarizes the work performed by Kinetic Analysis Corporation for the Department of Community Affairs (DCA) with respect to the creation of data sets to support the development of local mitigation strategies. Comprehensive risk analyses are performed to provide insight for both state authorities and county level managers to address the impacts due to hurricane perils. Major improvements since the 1998 study include: an update of relevant data bases in support of the project, utilization and analysis of tax base/parcel data, response to the Disaster Mitigation Act of 2000, and web based tools to retrieve relevant information. While more advanced users can ingest and use the GIS and data other raw output products, any potential user with access to a web browser can obtain detailed information on hurricane wind and related flooding, tornado, tsunami, earthquake, wildland fire, and sinkhole risks in the state.

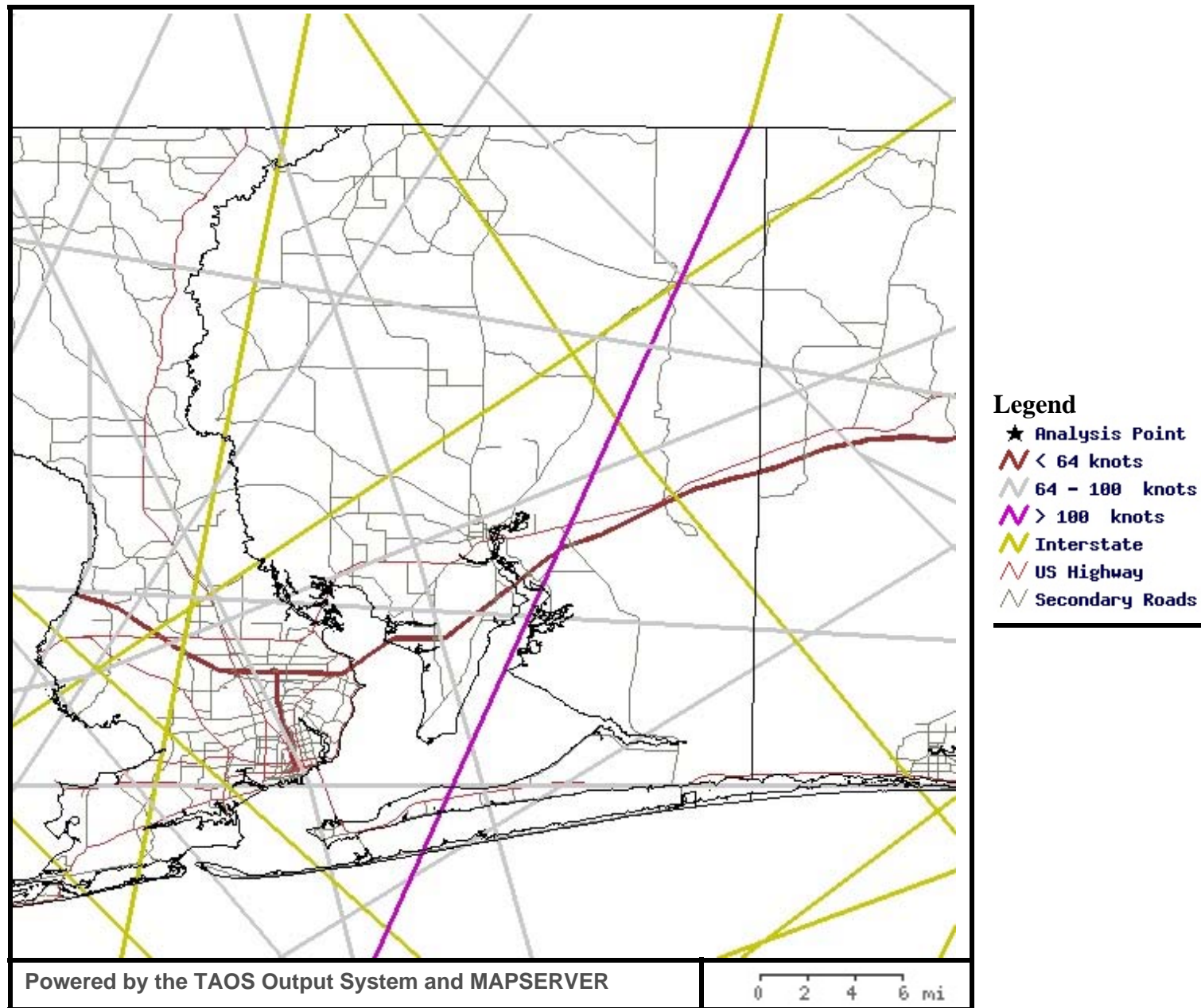
### *Disclaimer and Cautionary Notes*

The user is strongly cautioned that natural hazards modeling and analysis are subject to many uncertainties. These uncertainties include, but are not limited to, incomplete or inaccurate data, changes to the natural and built environment, limited historical records, and limitations in the state of the art of modeling, as well as limits to the scientific understanding of some of the phenomena. Users should have an appropriate background in the field of application, or seek competent advice in such fields.

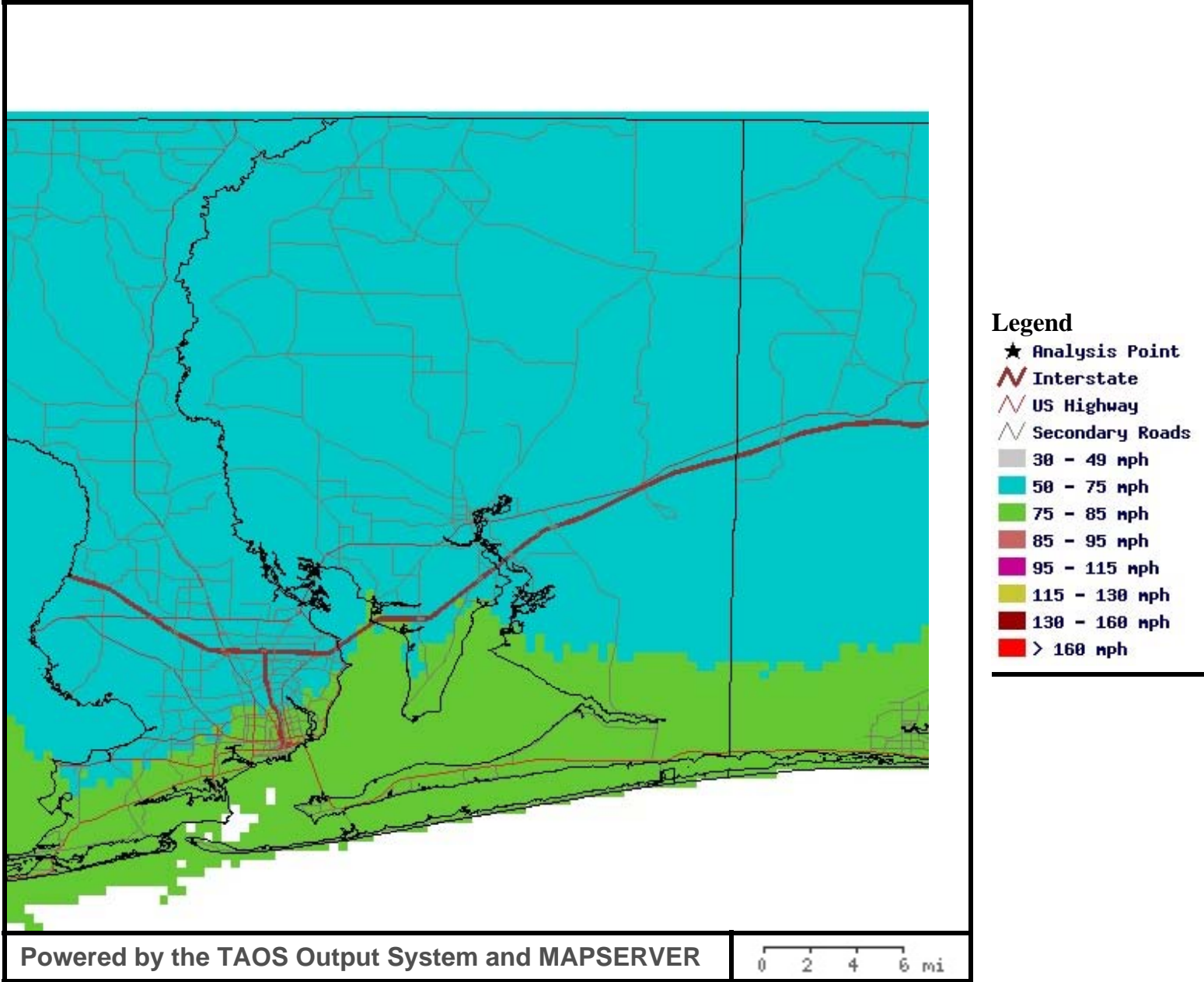
Anyone making use of this data or the information contained within assumes all liability deriving from such use, and agrees to "hold harmless" any and all agencies or individuals associated with its creation. The publication of the material contained herein is not intended as a representation or warranty that this information is suitable for any general or particular use. Kinetic Analysis Corporation, the University of Central Florida, the Florida Division of Emergency Management, and any other agency or individual associated with the creation or presentation of this data, assume no liability connected with your use of the data or the information it contains, and make no warranties, express or implied, as to its usability or accuracy.

The user should coordinate the use of this or any other hazard information for the purpose of design and construction with the responsible local officials where such coordination and approval is required to ensure compliance with building codes and other legal requirements.

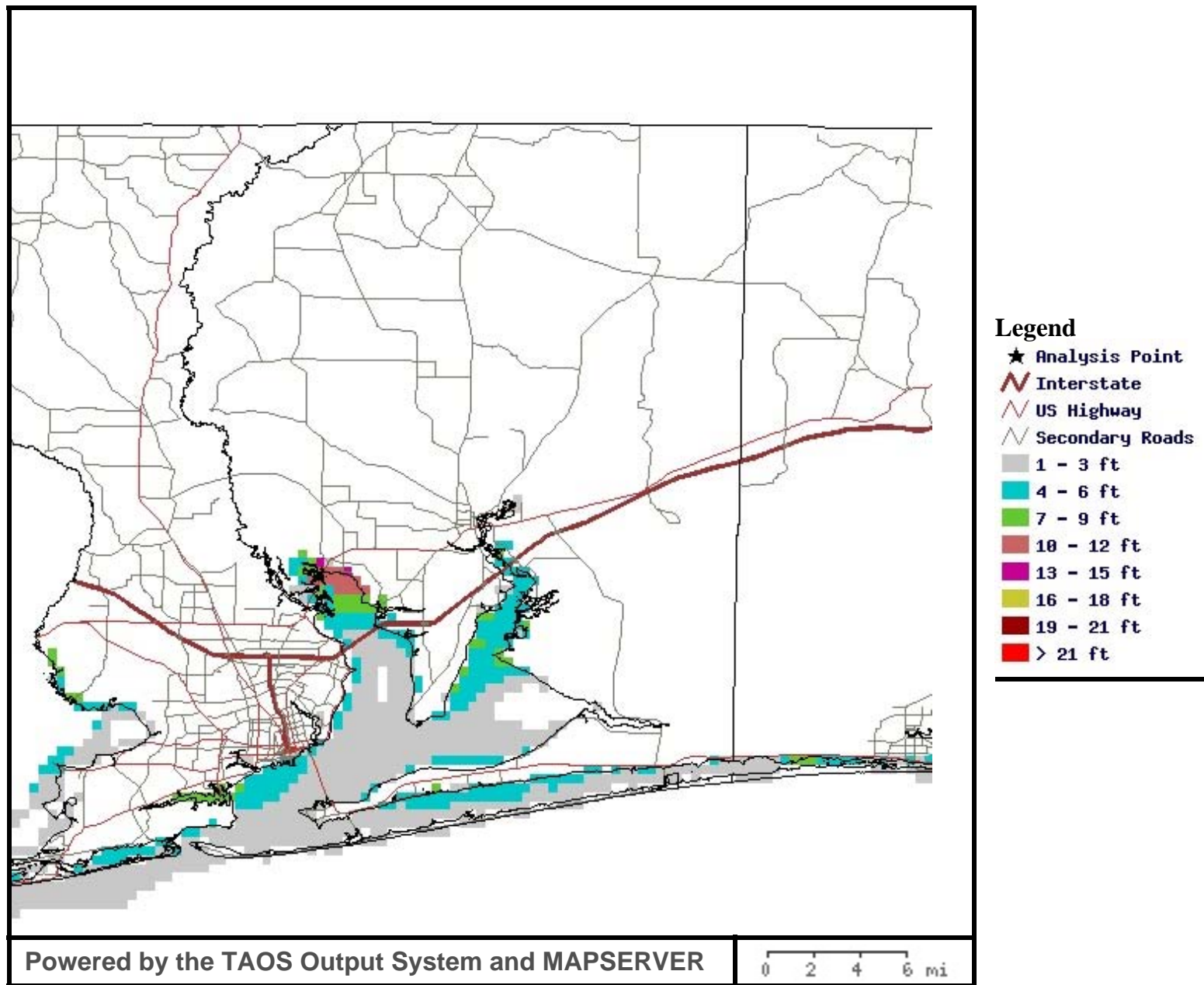
## Historical Hurricane Tracks for SANTA\_ROSA County



Hurricane tracks reported by the National Weather Service, 1851–2002.







Based on TAOS composite model simulations.

Structures in TAOS Category 1 Wind Zone for SANTA\_ROSA County

	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Total:	\$ 3,933,284,608	50,221

Value of structures in each zone by DOR Use Code

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Single Family	\$ 2,722,803,200	34,203
Mobile Homes	\$ 116,452,256	7,018
Multi-family	\$ 20,616,586	127
Condominia	\$ 127,886,744	911
Cooperatives	\$ 165,141	2
Retirement Homes	\$ 31,223	1
Boarding Homes (Institutional	\$ 0	0
Multi-family less than 10 un	\$ 55,486,496	761
Undefined reserved for DOR	\$ 0	0
Vacant Commercial	\$ 232,001	41
Stores One-Story	\$ 42,657,024	485
Mixed Use, i.e., StoÔe and Of	\$ 7,584,179	100
Department Stores	\$ 0	0
Supermarket	\$ 5,461,365	11
Regional Shopping Malls	\$ 0	0
Community Shopping Centers	\$ 38,453,140	205
One-Story Non-Professional Of	\$ 20,079,492	290
Multi-Story Non-Professional	\$ 4,019,059	7
Professional Service Building	\$ 31,008,126	214
Airports, Marinas, Bus Termin	\$ 0	0
Restaurants, Cafeterias	\$ 11,632,920	82
Drive-in Restaurants	\$ 8,070,460	44
Financial Institutions	\$ 14,131,282	35

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Insurance Company Offices	\$ 0	0
Repair Service Shops	\$ 11,773,898	190
Service Stations	\$ 599,952	12
Automotive Repair, Service, a	\$ 6,109,780	103
Parking Lots, Mobile Home Sal	\$ 6,094	2
Wholesale, Manufacturing, and	\$ 115,070	3
Florist, Greenhouses	\$ 286,176	9
Drive-in Theaters, Open Stadi	\$ 0	0
Enclosed Theaters, Auditorium	\$ 588	1
Night Clubs, Bars, and Cockta	\$ 742,769	20
Bowling Alleys, Skating Rings	\$ 1,932,576	3
Tourist Attractions	\$ 142,917	4
Camps	\$ 932,202	27
Race Horse, Auto, and Dog Tra	\$ 63,952	2
Golf Courses	\$ 10,348,840	27
Hotels, Motels	\$ 6,378,694	35
Vacant Industrial	\$ 187,764	11
Light Manufacturing	\$ 13,293,201	78
Heavy Manufacturing	\$ 10,409,200	34
Lumber Yards, Sawmills, Plann	\$ 162,705	7
Fruit, Vegetables, and Meat P	\$ 0	0
Canneries, Distilleries, and	\$ 0	0
Other Food ProcessinÉ	\$ 156,551	2
Mineral Processing	\$ 1,111,553	17
Warehouses, and DistÓibution	\$ 14,419,120	265
Industrial Storage (Fuel, Equ	\$ 871,855	20



DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Improved Agriculture	\$ 125,783,312	1,650
Cropland Soil Class 1	\$ 199,066,816	2,473
Cropland Soil Class 2	\$ 285,740	11
Cropland Soil Class 3	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Grazing Land Soil Class 1	\$ 0	0
Grazing Land Soil Class 2	\$ 0	0
Grazing Land Soil Class 3	\$ 0	0
Grazing Land Soil Class 4	\$ 0	0
Grazing Land Soil Class 5	\$ 0	0
Grazing Land Soil Class 6	\$ 0	0
Orchard, Groves, Citrus	\$ 0	0
Poultry, Bees, Tropical Fish,	\$ 177,544	11
Dairies, Feed Lots	\$ 0	0
Ornamentals, Misc. Agricultur	\$ 808,564	18
Vacant Institutional	\$ 0	0
Churches	\$ 54,837,652	277
Private Schools	\$ 3,879,250	31
Private Hospitals	\$ 14,767,412	3
Homes for Aged	\$ 6,338,376	6

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Orphanages	\$ 31,529	1
Mortuaries, Cemeteries	\$ 1,580,870	10
Clubs, Lodges, and Union Hall	\$ 3,159,047	43
Sanitariums, Convalescent, an	\$ 438,976	6
Cultural Organizations	\$ 4,448,012	10
Undefined	\$ 0	0
Military	\$ 673,223	2
Forest, Park, and Recreationa	\$ 223,388	7
Public Schools	\$ 23,858,494	23
Colleges	\$ 176,470	1
Public Hospitals	\$ 18,751,330	11
Other Counties	\$ 62,345,944	92
Other State	\$ 398,776	7
Other Federal	\$ 92,279,552	9
Other Municipal	\$ 2,243,260	19
Gov. Owned Leased by Non-Gov.	\$ 52,535	1
Utilities	\$ 9,686,245	77
Mining, Petroleum, and Gas La	\$ 10,129	1
Subsurface Rights	\$ 0	0
Rights-of-Way Streets, Roads,	\$ 4,117	4
Rivers, Lakes, and Submerged	\$ 0	0
Sewage Disposal, Borrow Pits,	\$ 0	0
Outdoor Recreational	\$ 0	0
Centrally Assessed	\$ 0	0
Acreage not Zoned for Agricul	\$ 109,011	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 1 Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Light Damage (< 10%)
TOTAL:	117,743

Population in each zone by vulnerability class

DOR Code	Light Damage (< 10%)
Total Population	117,743
Minority	10,921
Elderly (65+)	12,972
Disabled	39,821
Below Poverty	11,282
Single-Parent	3,826

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS Category 1 Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 3,685,929	\$ 589,313,408	\$ 3,340,236,032	65	5,573	44,583

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 3,490,576	\$ 409,853,984	\$ 2,309,447,680	50	4,216	29,937
Mobile Homes	\$ 82,698	\$ 5,131,441	\$ 111,237,968	12	369	6,637
Multi-family	\$ 0	\$ 576,917	\$ 20,039,670	0	5	122
Condominia	\$ 0	\$ 94,574,344	\$ 33,312,430	0	507	404
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 0	\$ 31,223	0	0	1
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 0	\$ 4,114,097	\$ 51,372,408	0	63	698
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 0	\$ 9,427	\$ 222,574	0	5	36
Stores One--Story	\$ 23,129	\$ 9,501,965	\$ 33,131,930	1	42	442
Mixed Use, i e., Store and Of	\$ 0	\$ 4,281,823	\$ 3,302,355	0	38	62
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 0	\$ 6,771,223	\$ 31,681,920	0	45	160
One--Story Non--Professional Of	\$ 0	\$ 783,123	\$ 19,296,368	0	20	270
Multi--Story Non--Professional	\$ 0	\$ 100,129	\$ 3,918,929	0	2	5
Professional Service Building	\$ 0	\$ 3,548,317	\$ 27,459,810	0	24	190
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 0	\$ 5,607,659	\$ 6,025,260	0	25	57
Drive-in Restaurants	\$ 0	\$ 398,705	\$ 7,671,753	0	2	42
Financial Institutions	\$ 0	\$ 2,721,294	\$ 11,409,988	0	5	30

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 0	\$ 4,426,765	\$ 7,347,132	0	22	168
Service Stations	\$ 0	\$ 201,835	\$ 398,117	0	4	8
Automotive Repair, Service, a	\$ 0	\$ 264,354	\$ 5,845,426	0	6	97
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 0	\$ 42,882	\$ 699,887	0	1	19
Bowling Alleys, Skating Rings	\$ 0	\$ 1,471,882	\$ 460,694	0	2	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 0	\$ 0	\$ 10,348,840	0	0	27
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 0	\$ 6,823	\$ 180,941	0	2	9
Light Manufacturing	\$ 0	\$ 743,282	\$ 12,549,919	0	5	73
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
WarehousÇs, and Distribution	\$ 0	\$ 977,607	\$ 13,441,514	0	22	243
Industrial Storage (Fuel, Equ	\$ 0	\$ 0	\$ 871,855	0	0	20

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 0	\$ 967,144	\$ 124,816,160	0	9	1,641
Cropland Soil Class 1	\$ 89,524	\$ 869,285	\$ 198,108,032	2	19	2,452
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	0	0	11
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 42,292	\$ 135,251	0	6	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 808,564	0	0	18
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 0	\$ 3,617,470	\$ 51,220,180	0	21	256
Private Schools	\$ 0	\$ 0	\$ 3,879,250	0	0	31
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 0	\$ 318,352	\$ 1,262,517	0	2	8
Clubs, Lodges, and Union Hall	\$ 0	\$ 733,070	\$ 2,425,976	0	8	35
Sanitariums, Convalescent, an	\$ 0	\$ 361,764	\$ 77,211	0	3	3
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 0	\$ 32,270	\$ 191,117	0	1	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 0	\$ 0	\$ 398,776	0	0	7
Other FeÆeral	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 58,823	\$ 2,184,436	0	1	18
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 0	\$ 295,870	\$ 9,390,375	0	4	73
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 0	\$ 1,176	\$ 2,941	0	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 0	\$ 109,011	0	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 1 Flood Zone for SANTA\_ROSA County

Total Population in each zone

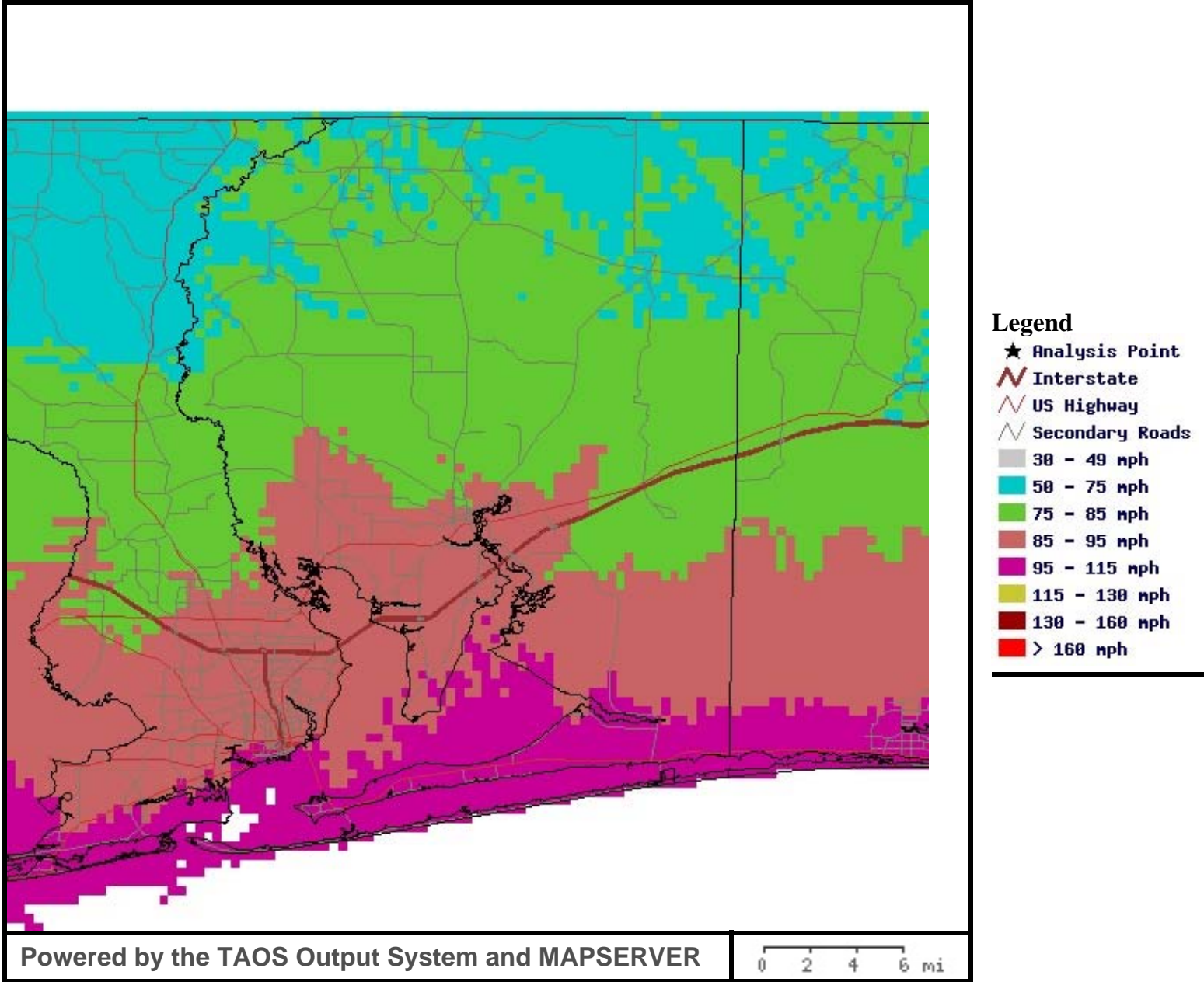
	Wave/Current	Flood	None
TOTAL:	1,555	5,590	110,598

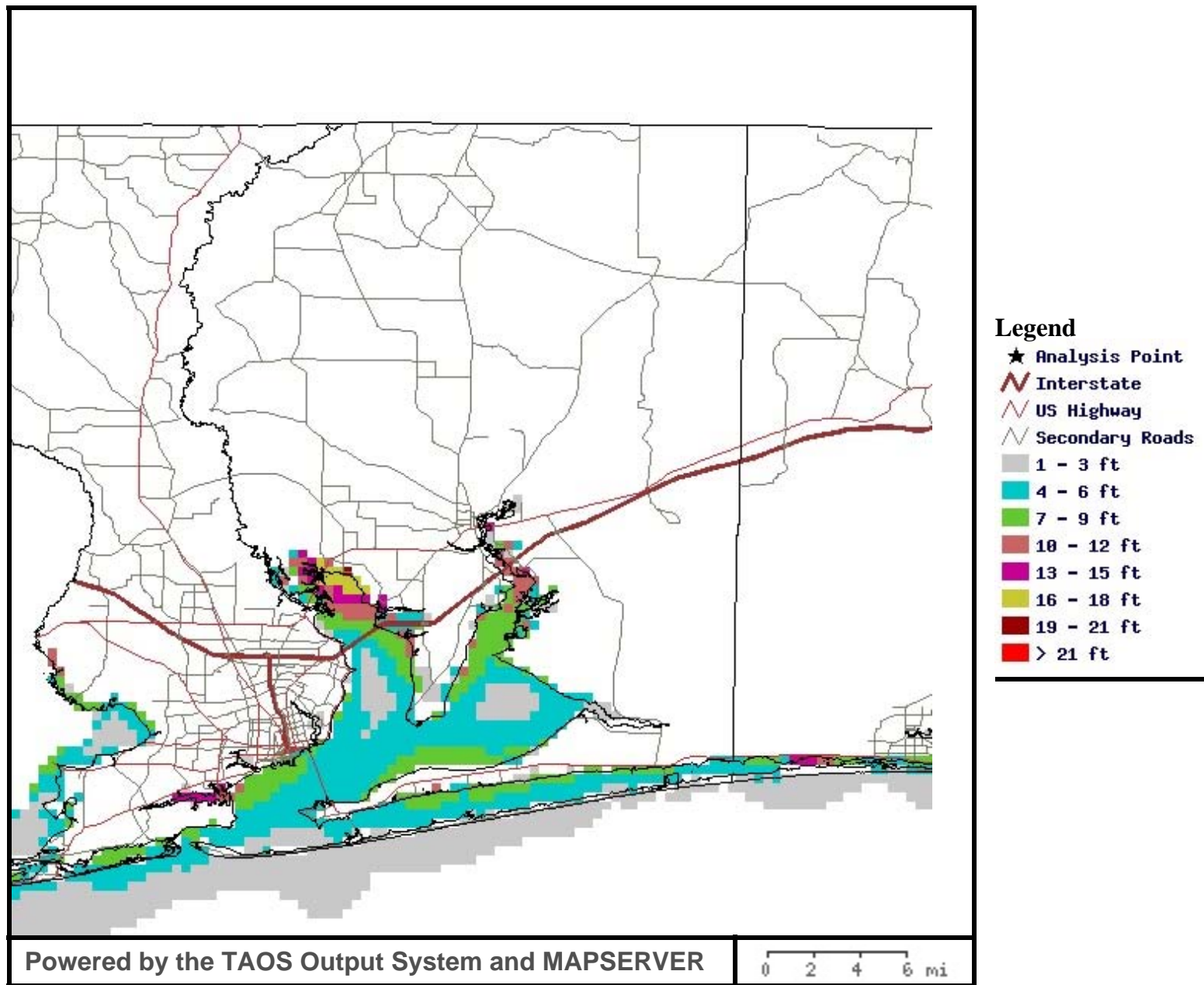
Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	1,555	5,590	110,598
Minority	101	178	10,642
Elderly (65+)	194	986	11,792
Disabled	615	1,299	37,907
Below Poverty	239	232	10,811
Single-Parent	44	147	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.







Based on TAOS composite model simulations.

Structures in TAOS Category 2 Wind Zone for SANTA\_ROSA County

	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Total:	\$ 1,112,822,528	\$ 2,820,403,968	11,125	39,096

Value of structures in each zone by DOR Use Code

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Single Family	\$ 816,593,600	\$ 1,906,198,272	8,124	26,079
Mobile Homes	\$ 21,045,238	\$ 95,406,624	1,211	5,807
Multi-family	\$ 7,998,470	\$ 12,618,117	48	79
Condominia	\$ 118,960,768	\$ 8,926,004	797	114
Cooperatives	\$ 0	\$ 165,141	0	2
Retirement Homes	\$ 0	\$ 31,223	0	1
Boarding Homes (Institutional	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 14,681,380	\$ 40,805,156	200	561
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 144,871	\$ 87,129	14	27
Stores One--Story	\$ 9,773,272	\$ 32,883,754	100	385
Mixed Use, i.e., StoÔe and Of	\$ 4,782,788	\$ 2,801,391	45	55
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 0	\$ 5,461,365	0	11
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 12,301,496	\$ 26,151,648	85	120
One--Story Non--Professional Of	\$ 5,944,329	\$ 14,135,156	72	218
Multi--Story Non--Professional	\$ 3,426,117	\$ 592,941	2	5
Professional Service Building	\$ 7,671,088	\$ 23,337,038	66	148
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 6,552,929	\$ 5,079,991	33	49
Drive-in Restaurants	\$ 3,129,764	\$ 4,940,694	16	28
Financial Institutions	\$ 4,401,882	\$ 9,729,400	12	23

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 4,143,541	\$ 7,630,355	34	156
Service Stations	\$ 340,988	\$ 258,964	7	5
Automotive Repair, Service, a	\$ 783,447	\$ 5,326,332	22	81
Parking Lots, Mobile Home Sal	\$ 0	\$ 6,094	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 115,070	0	3
Florist, Greenhouses	\$ 18,682	\$ 267,494	2	7
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	0	1
Night Clubs, Bars, and Cockta	\$ 162,600	\$ 580,169	4	16
Bowling Alleys, Skating Rings	\$ 814,588	\$ 1,117,988	1	2
Tourist Attractions	\$ 126,823	\$ 16,094	2	2
Camps	\$ 325,411	\$ 606,790	6	21
Race Horse, Auto, and Dog Tra	\$ 0	\$ 63,952	0	2
Golf Courses	\$ 2,711,764	\$ 7,637,075	5	22
Hotels, Motels	\$ 4,949,459	\$ 1,429,235	10	25
Vacant Industrial	\$ 2,352	\$ 185,411	1	10
Light Manufacturing	\$ 283,176	\$ 13,010,025	2	76
Heavy Manufacturing	\$ 0	\$ 10,409,200	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other Food ProcessinÉ	\$ 0	\$ 156,551	0	2
Mineral Processing	\$ 0	\$ 1,111,553	0	17
Warehouses, and DistÓibution	\$ 2,225,341	\$ 12,193,781	41	224
Industrial Storage (Fuel, Equ	\$ 0	\$ 871,855	0	20

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Improved Agriculture	\$ 749,860	\$ 125,033,440	5	1,645
Cropland Soil Class 1	\$ 1,567,620	\$ 197,499,264	24	2,449
Cropland Soil Class "	\$ 10,681	\$ 275,058	1	10
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 177,544	0	11
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 808,564	0	18
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 7,889,518	\$ 46,948,140	34	243
Private Schools	\$ 504,505	\$ 3,374,744	6	25
Private Hospitals	\$ 14,767,412	\$ 0	3	0
Homes for Aged	\$ 0	\$ 6,338,376	0	6

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Orphanages	\$ 0	\$ 31,529	0	1
Mortuaries, Cemeteries	\$ 264,235	\$ 1,316,635	1	9
Clubs, Lodges, and Union Hall	\$ 639,882	\$ 2,519,165	4	39
Sanitariums, Convalescent, an	\$ 0	\$ 438,976	0	6
Cultural Organizations	\$ 4,010,870	\$ 437,141	5	5
Undefined	\$ 0	\$ 0	0	0
Military	\$ 0	\$ 673,223	0	2
Forest, Park, and Recreationa	\$ 0	\$ 223,388	0	7
Public Schools	\$ 0	\$ 23,858,494	0	23
Colleges	\$ 0	\$ 176,470	0	1
Public Hospitals	\$ 0	\$ 18,751,330	0	11
Other Counties	\$ 26,271,066	\$ 36,074,872	66	26
Other State	\$ 0	\$ 398,776	0	7
Other Federal	\$ 482,705	\$ 91,796,848	1	8
Other Municipal	\$ 133,058	\$ 2,110,201	3	16
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 52,535	0	1
Utilities	\$ 1,232,282	\$ 8,453,965	9	68
Mining, Petroleum, and Gas La	\$ 0	\$ 10,129	0	1
Subsurface Rights	\$ 0	\$ 0	0	0
Rights–of–Way Streets, Roads,	\$ 1,176	\$ 2,941	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 109,011	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 2 Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Moderate Damage (10 – 30%)	Light Damage (< 10%)
TOTAL:	18,514	99,229

Population in each zone by vulnerability class

DOR Code	Moderate Damage (10 – 30%)	Light Damage (< 10%)
Total Population	18,514	99,229
Minority	1,441	9,480
Elderly (65+)	2,609	10,363
Disabled	4,873	34,948
Below Poverty	1,114	10,168
Single-Parent	575	3,251

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS Category 2 Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 17,942,148	\$ 605,674,496	\$ 3,309,618,176	339	5,824	44,058

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 15,650,978	\$ 420,245,344	\$ 2,286,896,384	266	4,303	29,634
Mobile Homes	\$ 487,749	\$ 7,248,593	\$ 108,715,728	41	509	6,468
Multi-family	\$ 40,517	\$ 536,400	\$ 20,039,670	1	4	122
Condominia	\$ 105,764	\$ 94,506,104	\$ 33,274,900	1	507	403
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 0	\$ 31,223	0	0	1
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 100,902	\$ 4,077,114	\$ 51,308,488	5	59	697
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 0	\$ 9,427	\$ 222,574	0	5	36
Stores One--Story	\$ 343,447	\$ 9,673,248	\$ 32,640,330	7	46	432
Mixed Use, i e., Store and Of	\$ 0	\$ 4,281,823	\$ 3,302,355	0	38	62
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 0	\$ 6,771,223	\$ 31,681,920	0	45	160
One--Story Non--Professional Of	\$ 38,964	\$ 797,005	\$ 19,243,522	1	20	269
Multi--Story Non--Professional	\$ 0	\$ 100,129	\$ 3,918,929	0	2	5
Professional Service Building	\$ 181,341	\$ 3,366,976	\$ 27,459,810	1	23	190
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 0	\$ 6,451,188	\$ 5,181,731	0	37	45
Drive-in Restaurants	\$ 0	\$ 398,705	\$ 7,671,753	0	2	42
Financial Institutions	\$ 0	\$ 2,721,294	\$ 11,409,988	0	5	30



DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 0	\$ 4,721,753	\$ 7,052,143	0	28	162
Service Stations	\$ 0	\$ 201,835	\$ 398,117	0	4	8
Automotive Repair, Service, a	\$ 0	\$ 264,354	\$ 5,845,426	0	6	97
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 0	\$ 42,882	\$ 699,887	0	1	19
Bowling Alleys, Skating Rings	\$ 0	\$ 1,471,882	\$ 460,694	0	2	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 0	\$ 2,711,764	\$ 7,637,075	0	5	22
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 0	\$ 6,823	\$ 180,941	0	2	9
Light Manufacturing	\$ 0	\$ 743,282	\$ 12,549,919	0	5	73
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
WarehousÇs, and Distribution	\$ 0	\$ 1,286,136	\$ 13,132,984	0	26	239
Industrial Storage (Fuel, Equ	\$ 0	\$ 0	\$ 871,855	0	0	20

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 72,000	\$ 1,484,850	\$ 124,226,448	1	14	1,635
Cropland Soil Class 1	\$ 351,767	\$ 674,867	\$ 198,040,224	7	16	2,450
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	0	0	11
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 42,292	\$ 135,251	0	6	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 808,564	0	0	18
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 390,478	\$ 3,226,991	\$ 51,220,180	4	17	256
Private Schools	\$ 0	\$ 0	\$ 3,879,250	0	0	31
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 0	\$ 318,352	\$ 1,262,517	0	2	8
Clubs, Lodges, and Union Hall	\$ 144,494	\$ 650,223	\$ 2,364,329	2	7	34
Sanitariums, Convalescent, an	\$ 0	\$ 361,764	\$ 77,211	0	3	3
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 0	\$ 191,117	1	0	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 0	\$ 6,588	\$ 392,188	0	3	4
Other FeÆeral	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 58,823	\$ 2,184,436	0	1	18
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 1,470	\$ 308,035	\$ 9,376,740	1	4	72
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 0	\$ 1,176	\$ 2,941	0	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 0	\$ 109,011	0	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in TAOS Category 2 Flood Zone for SANTA\_ROSA County

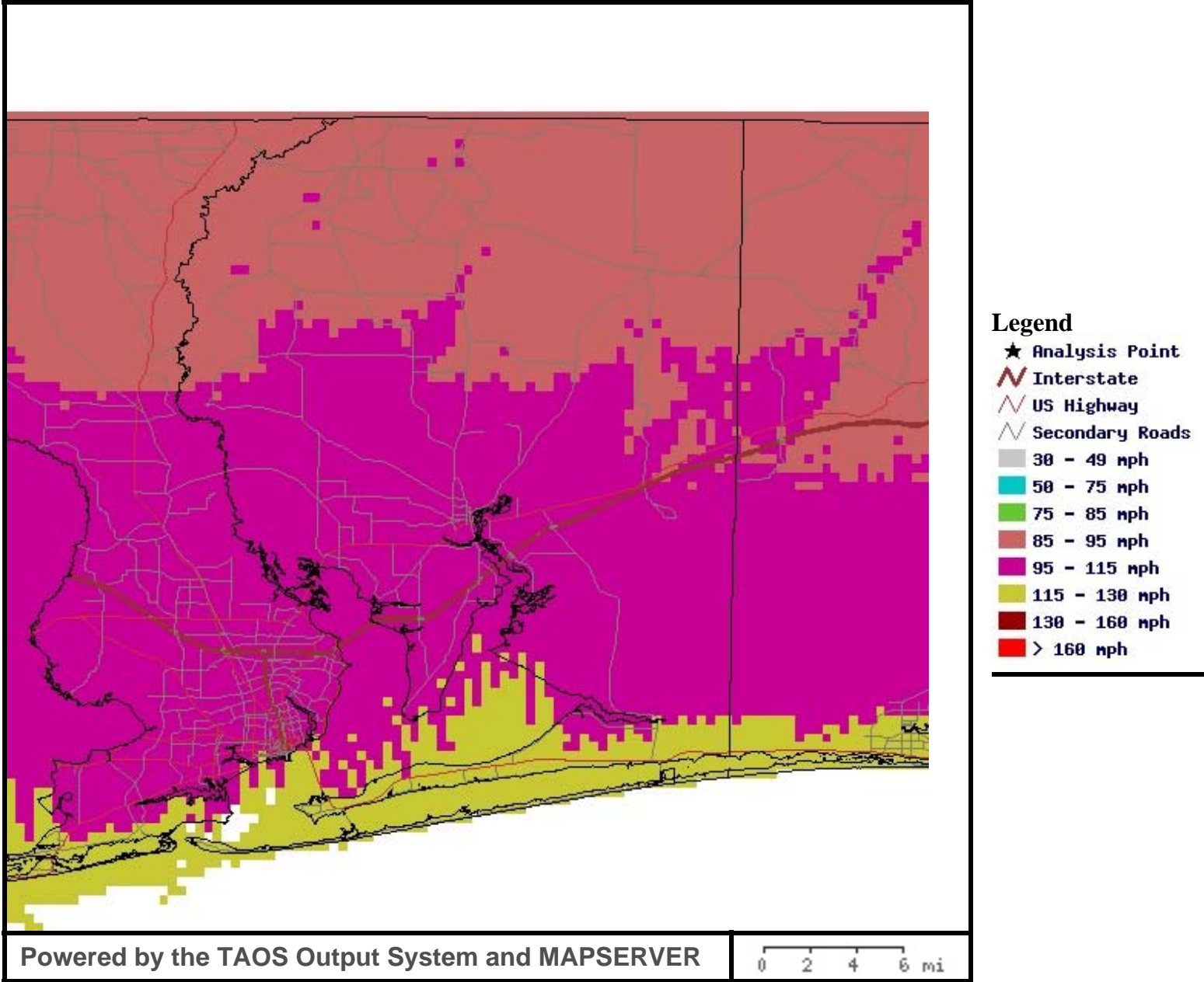
Total Population in each zone

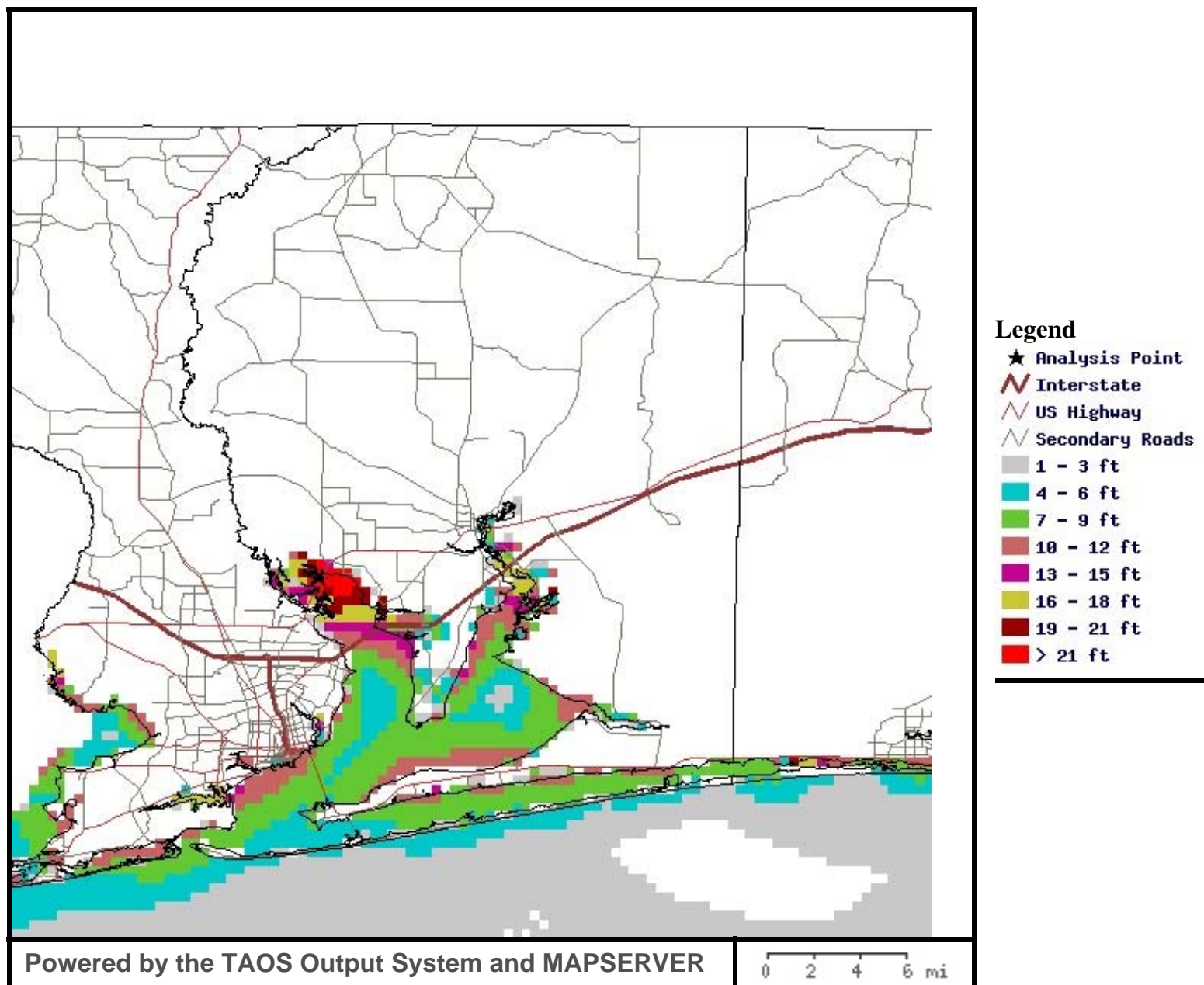
	Wave/Current	Flood	None
TOTAL:	3,315	3,830	110,598

Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	3,315	3,830	110,598
Minority	164	115	10,642
Elderly (65+)	417	763	11,792
Disabled	1,012	902	37,907
Below Poverty	357	114	10,811
Single-Parent	78	113	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.





Based on TAOS composite model simulations.

**Structures in TAOS Category 3 Wind Zone for SANTA\_ROSA County**

	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Total:	\$ 3,625,459,200	\$ 307,824,768	45,089	5,132

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Single Family	\$ 2,637,869,056	\$ 84,936,880	32,429	1,774
Mobile Homes	\$ 105,218,992	\$ 11,233,180	6,393	625
Multi-family	\$ 20,616,586	\$ 0	127	0
Condominia	\$ 127,468,040	\$ 418,706	895	16
Cooperatives	\$ 165,141	\$ 0	2	0
Retirement Homes	\$ 31,223	\$ 0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 55,338,456	\$ 148,042	759	2
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 224,354	\$ 7,647	38	3
Stores One--Story	\$ 40,360,696	\$ 2,296,326	433	52
Mixed Use, i.e.,Store and Of	\$ 7,534,685	\$ 49,494	99	1
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 5,173,835	\$ 287,529	6	5
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 38,453,140	\$ 0	205	0
One--Story Non--Professional Of	\$ 19,238,428	\$ 841,063	273	17
Multi--Story Non--Professional	\$ 4,019,059	\$ 0	7	0
Professional Service Building	\$ 30,133,922	\$ 874,204	206	8
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 11,536,891	\$ 96,028	78	4
Drive--in Restaurants	\$ 8,070,460	\$ 0	44	0
Financial Institutions	\$ 13,414,541	\$ 716,741	33	2

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 10,780,634	\$ 993,263	161	29
Service Stations	\$ 599,952	\$ 0	12	0
Automotive Repair, Service, a	\$ 5,835,350	\$ 274,431	94	9
Parking Lots, Mobile Home Sal	\$ 6,094	\$ 0	2	0
Wholesale, Manufacturing, and	\$ 109,188	\$ 5,882	2	1
Florist, Greenhouses	\$ 286,176	\$ 0	9	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	0	1
Night Clubs, Bars, and Cockta	\$ 672,360	\$ 70,409	17	3
Bowling Alleys, Skating Rings	\$ 1,932,576	\$ 0	3	0
Tourist Attractions	\$ 142,917	\$ 0	4	0
Camps	\$ 746,614	\$ 185,588	17	10
Race Horse, Auto, and Dog Tra	\$ 63,952	\$ 0	2	0
Golf Courses	\$ 10,348,840	\$ 0	27	0
Hotels, Motels	\$ 6,378,694	\$ 0	35	0
Vacant Industrial	\$ 183,882	\$ 3,882	9	2
Light Manufacturing	\$ 13,041,296	\$ 251,905	75	3
Heavy Manufacturing	\$ 10,409,200	\$ 0	34	0
Lumber Yards, Sawmills, Plann	\$ 162,705	\$ 0	7	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other Food ProceÖsing	\$ 125,764	\$ 30,787	1	1
Mineral Processing	\$ 0	\$ 1,111,553	0	17
Warehouses, and Distribution	\$ 12,083,715	\$ 2,335,405	224	41
Industrial Storage (Fuel, Equ	\$ 836,623	\$ 35,231	17	3



DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Improved Agriculture	\$ 50,096,900	\$ 75,686,360	641	1,009
Cropland Soil Class 1	\$ 83,380,112	\$ 115,686,664	1,074	1,399
Cropland Soil Class 2	\$ 123,398	\$ 162,341	4	7
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 158,940	\$ 18,604	9	2
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 792,811	\$ 15,752	17	1
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 49,316,692	\$ 5,520,962	224	53
Private Schools	\$ 3,879,250	\$ 0	31	0
Private Hospitals	\$ 14,767,412	\$ 0	3	0
Homes for Aged	\$ 6,338,376	\$ 0	6	0

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Orphanages	\$ 31,529	\$ 0	1	0
Mortuaries, Cemeteries	\$ 1,383,764	\$ 197,105	9	1
Clubs, Lodges, and Union Hall	\$ 2,939,972	\$ 219,074	38	5
Sanitariums, Convalescent, an	\$ 438,976	\$ 0	6	0
Cultural Organizations	\$ 4,448,012	\$ 0	10	0
Undefined	\$ 0	\$ 0	0	0
Military	\$ 673,223	\$ 0	2	0
Forest, Park, and Recreationa	\$ 101,317	\$ 122,070	5	2
Public Schools	\$ 23,858,494	\$ 0	23	0
Colleges	\$ 176,470	\$ 0	1	0
Public Hospitals	\$ 16,765,059	\$ 1,986,270	8	3
Other Counties	\$ 62,345,944	\$ 0	92	0
Other State	\$ 310,541	\$ 88,235	6	1
Other Federal	\$ 92,279,552	\$ 0	9	0
Other Municipal	\$ 1,940,701	\$ 302,558	16	3
Gov. Owned Leased by Non-Gov.	\$ 52,535	\$ 0	1	0
Utilities	\$ 9,086,353	\$ 599,893	62	15
Mining, Petroleum, and Gas La	\$ 10,129	\$ 0	1	0
Subsurface Rights	\$ 0	\$ 0	0	0
Rights-of-Way Streets, Roads,	\$ 4,117	\$ 0	4	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 96,117	\$ 12,894	6	2

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 3 Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Moderate Damage (10 – 30%)	Light Damage (< 10%)
TOTAL:	107,782	9,961

Population in each zone by vulnerability class

DOR Code	Moderate Damage (10 – 30%)	Light Damage (< 10%)
Total Population	107,782	9,961
Minority	9,676	1,245
Elderly (65+)	11,968	1,004
Disabled	35,517	4,304
Below Poverty	9,852	1,430
Single-Parent	3,600	226

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS Category 3 Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 209,142,432	\$ 474,788,352	\$ 3,249,303,296	2,263	4,669	43,289

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 178,407,168	\$ 309,826,560	\$ 2,234,563,584	1,846	3,317	29,040
Mobile Homes	\$ 2,818,080	\$ 6,886,555	\$ 106,747,456	212	436	6,370
Multi-family	\$ 40,517	\$ 1,025,058	\$ 19,551,010	1	8	118
Condominia	\$ 1,137,764	\$ 94,182,008	\$ 32,567,020	24	487	400
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 31,223	\$ 0	0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 1,175,137	\$ 3,247,428	\$ 51,063,936	19	51	691
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 1,176	\$ 13,544	\$ 217,280	1	6	34
Stores One--Story	\$ 7,780,788	\$ 2,971,483	\$ 31,904,754	22	41	422
Mixed Use, i e., Store and Of	\$ 74,670	\$ 4,281,384	\$ 3,228,124	3	37	60
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 6,084,447	\$ 686,776	\$ 31,681,920	35	10	160
One--Story Non--Professional Of	\$ 626,470	\$ 529,994	\$ 18,923,024	14	13	263
Multi--Story Non--Professional	\$ 0	\$ 386,011	\$ 3,633,047	0	3	4
Professional Service Building	\$ 1,779,717	\$ 2,173,517	\$ 27,054,894	6	22	186
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 0	\$ 6,451,188	\$ 5,181,731	0	37	45
Drive-in Restaurants	\$ 398,705	\$ 219,411	\$ 7,452,341	2	1	41
Financial Institutions	\$ 1,017,058	\$ 1,704,235	\$ 11,409,988	2	3	30

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 1,297,235	\$ 3,472,623	\$ 7,004,037	8	21	161
Service Stations	\$ 102,000	\$ 99,835	\$ 398,117	1	3	8
Automotive Repair, Service, a	\$ 184,717	\$ 124,730	\$ 5,800,332	3	5	95
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 0	\$ 42,882	\$ 699,887	0	1	19
Bowling Alleys, Skating Rings	\$ 657,294	\$ 814,588	\$ 460,694	1	1	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 0	\$ 2,711,764	\$ 7,637,075	0	5	22
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 2,352	\$ 4,470	\$ 180,941	1	1	9
Light Manufacturing	\$ 192,129	\$ 597,905	\$ 12,503,166	1	5	72
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
WarehousÇs, and Distribution	\$ 756,148	\$ 584,211	\$ 13,078,760	15	13	237
Industrial Storage (Fuel, Equ	\$ 0	\$ 28,235	\$ 843,620	0	1	19

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 223,905	\$ 2,279,268	\$ 123,280,136	3	19	1,628
Cropland Soil Class 1	\$ 803,780	\$ 608,104	\$ 197,654,992	16	23	2,434
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	0	0	11
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 42,292	\$ 135,251	0	6	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 808,564	0	0	18
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 1,873,019	\$ 2,659,803	\$ 50,304,824	9	17	251
Private Schools	\$ 0	\$ 17,647	\$ 3,861,603	0	1	30
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 0	\$ 1,262,517	2	0	8
Clubs, Lodges, and Union Hall	\$ 698,600	\$ 96,117	\$ 2,364,329	7	2	34
Sanitariums, Convalescent, an	\$ 361,764	\$ 0	\$ 77,211	3	0	3
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 0	\$ 191,117	1	0	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 0	\$ 6,588	\$ 392,188	0	3	4
Other FeÆeral	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 62,352	\$ 2,180,907	0	2	17
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 295,870	\$ 13,635	\$ 9,376,740	4	1	72
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 1,176	\$ 0	\$ 2,941	1	0	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 0	\$ 109,011	0	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 3 Flood Zone for SANTA\_ROSA County

Total Population in each zone

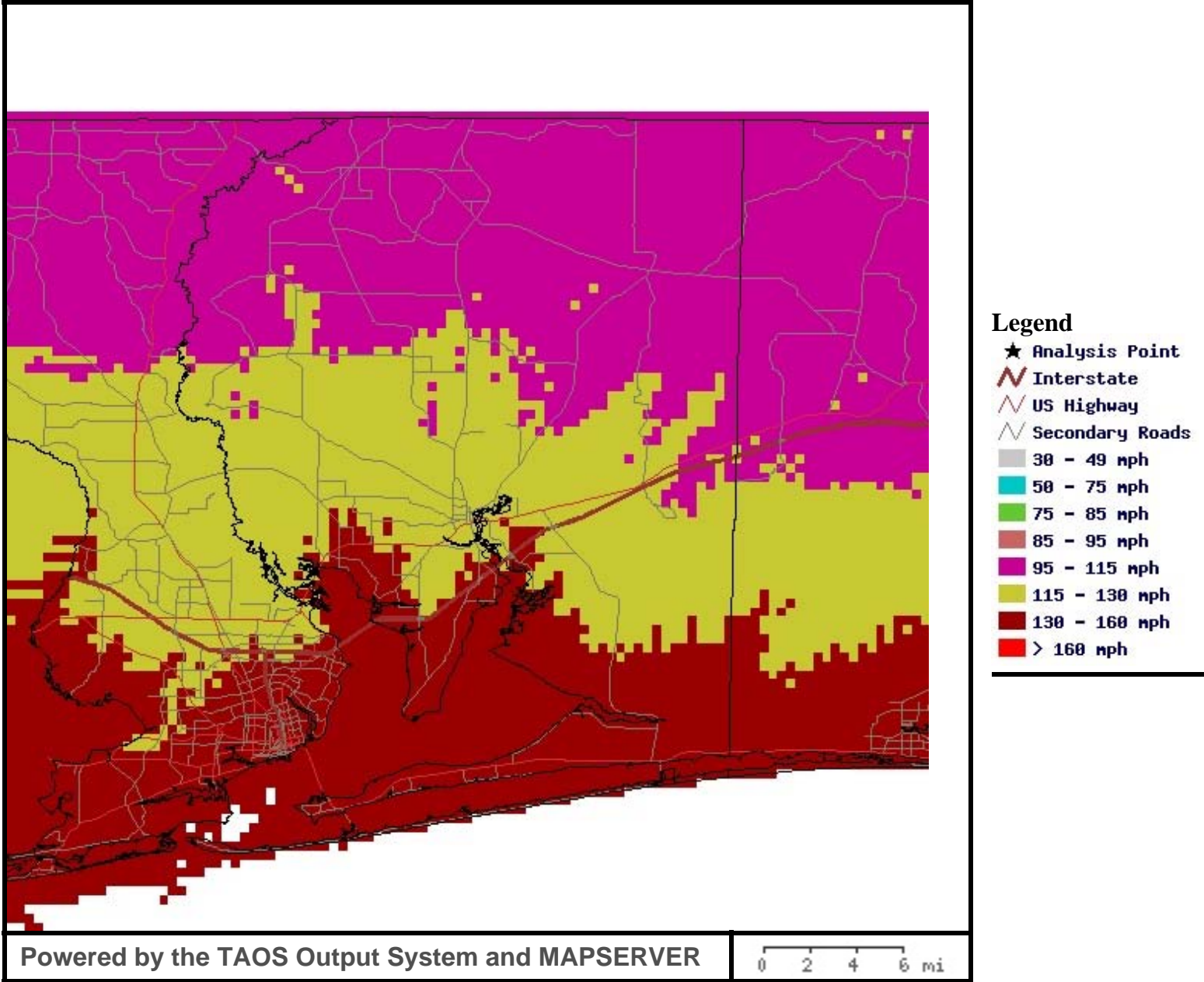
	Wave/Current	Flood	None
TOTAL:	4,295	2,850	110,598

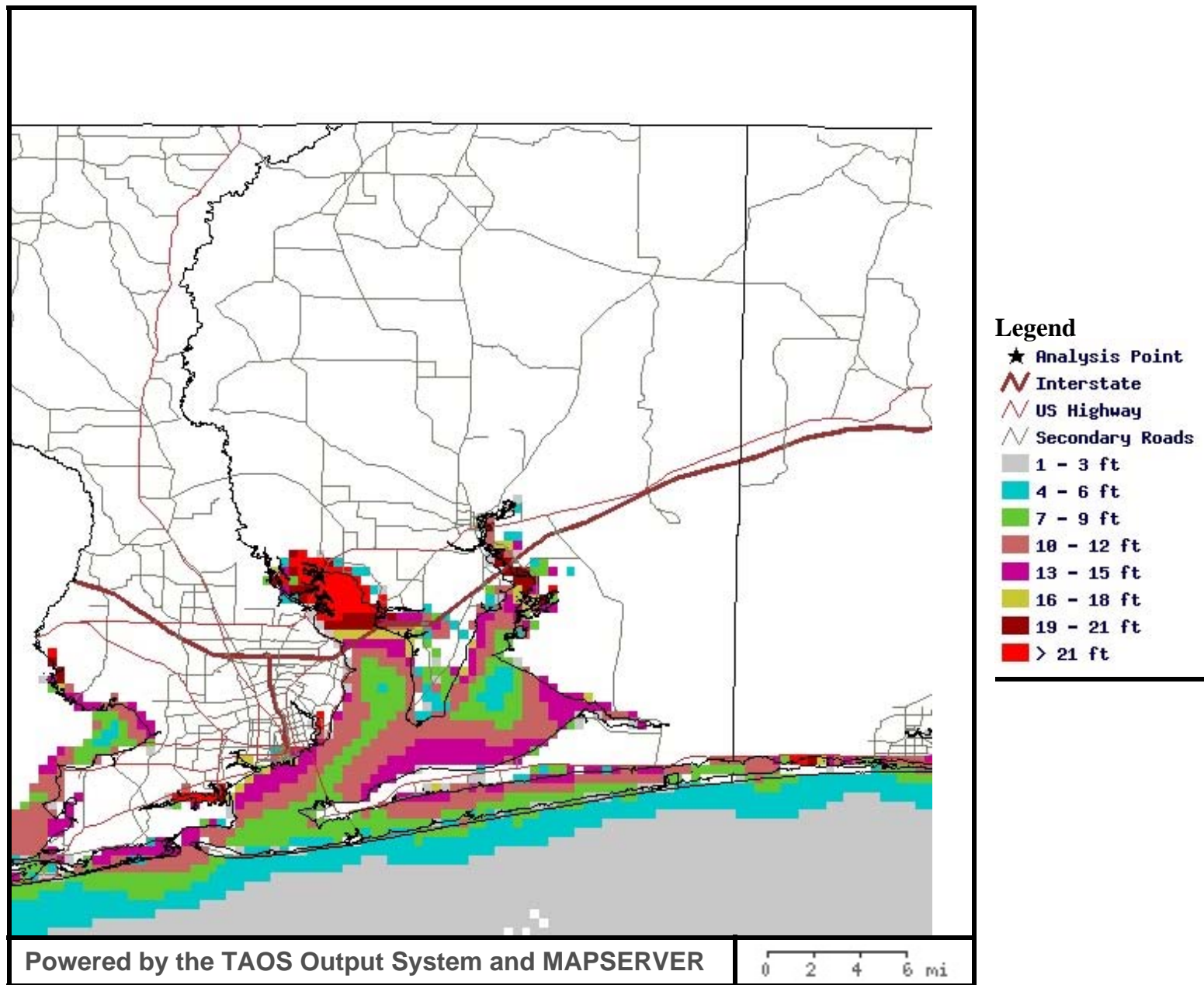
Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	4,295	2,850	110,598
Minority	211	68	10,642
Elderly (65+)	558	622	11,792
Disabled	1,244	670	37,907
Below Poverty	397	74	10,811
Single-Parent	107	84	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.







Based on TAOS composite model simulations.

Structures in TAOS Category 4 Wind Zone for SANTA\_ROSA County

	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Value in Moderate Damage (10 – 30%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)	Bldgs in Moderate Damage (10 – 30%)
Total:	\$ 1,766,916,864	\$ 1,693,432,576	\$ 472,863,008	18,417	23,924	7,880

Value of structures in each zone by DOR Use Code

DOR Code	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Value in Moderate Damage (10 – 30%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)	Bldgs in Moderate Damage (10 – 30%)
Single Family	\$ 1,382,214,272	\$ 1,176,817,024	\$ 163,770,096	13,945	17,189	3,069
Mobile Homes	\$ 34,897,924	\$ 60,697,528	\$ 20,856,446	2,106	3,774	1,138
Multi–family	\$ 8,448,141	\$ 12,168,445	\$ 0	50	77	0
Condominia	\$ 126,667,808	\$ 614,000	\$ 604,941	887	6	18
Cooperatives	\$ 0	\$ 165,141	\$ 0	0	2	0
Retirement Homes	\$ 0	\$ 31,223	\$ 0	0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi–family less than 10 un	\$ 24,944,756	\$ 25,650,864	\$ 4,890,915	317	391	53
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 163,412	\$ 45,941	\$ 22,647	20	16	5
Stores One–Story	\$ 19,972,054	\$ 18,806,662	\$ 3,878,300	140	260	85
Mixed Use, i.e.,Store and Of	\$ 5,085,011	\$ 2,399,149	\$ 100,018	48	49	3
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 5,173,835	\$ 287,529	0	6	5
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 19,466,908	\$ 18,276,118	\$ 710,117	128	69	8
One–Story Non–Professional Of	\$ 7,192,436	\$ 11,644,256	\$ 1,242,793	101	162	27
Multi–Story Non–Professional	\$ 3,621,070	\$ 397,988	\$ 0	5	2	0
Professional Service Building	\$ 11,897,984	\$ 15,135,655	\$ 3,974,486	88	96	30
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 8,352,764	\$ 2,960,633	\$ 319,522	51	25	6
Drive–in Restaurants	\$ 3,882,400	\$ 4,075,941	\$ 112,117	19	23	2
Financial Institutions	\$ 6,277,647	\$ 7,136,893	\$ 716,741	16	17	2

DOR Code	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Value in Moderate Damage (10 – 30%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)	Bldgs in Moderate Damage (10 – 30%)
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 6,858,340	\$ 3,453,795	\$ 1,461,761	73	78	39
Service Stations	\$ 340,988	\$ 101,776	\$ 157,188	7	3	2
Automotive Repair, Service, a	\$ 1,550,435	\$ 4,175,344	\$ 384,002	33	58	12
Parking Lots, Mobile Home Sal	\$ 0	\$ 6,094	\$ 0	0	2	0
Wholesale, Manufacturing, and	\$ 0	\$ 42,600	\$ 72,470	0	1	2
Florist, Greenhouses	\$ 49,929	\$ 236,247	\$ 0	4	5	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 205,482	\$ 423,359	\$ 113,927	5	11	4
Bowling Alleys, Skating Rings	\$ 1,471,882	\$ 460,694	\$ 0	2	1	0
Tourist Attractions	\$ 133,600	\$ 9,317	\$ 0	3	1	0
Camps	\$ 325,411	\$ 289,472	\$ 317,317	6	7	14
Race Horse, Auto, and Dog Tra	\$ 0	\$ 63,952	\$ 0	0	2	0
Golf Courses	\$ 4,723,529	\$ 5,625,310	\$ 0	8	19	0
Hotels, Motels	\$ 4,949,459	\$ 1,342,541	\$ 86,694	10	24	1
Vacant Industrial	\$ 32,705	\$ 145,294	\$ 9,764	4	4	3
Light Manufacturing	\$ 1,867,447	\$ 11,021,642	\$ 404,111	12	56	10
Heavy Manufacturing	\$ 0	\$ 10,409,200	\$ 0	0	34	0
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	\$ 0	0	7	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other Food ProceÖsing	\$ 0	\$ 125,764	\$ 30,787	0	1	1
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
Warehouses, Änd Distribution	\$ 4,121,737	\$ 7,479,991	\$ 2,817,394	77	136	52
Industrial Storage (Fuel, Equ	\$ 497,588	\$ 333,741	\$ 40,525	9	7	4

DOR Code	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Value in Moderate Damage (10 – 30%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)	Bldgs in Moderate Damage (10 – 30%)
Improved Agriculture	\$ 1,442,756	\$ 30,677,074	\$ 93,663,448	16	372	1,262
Cropland Soil Class 1	\$ 1,940,683	\$ 40,036,336	\$ 157,089,872	33	578	1,862
Cropland Soil ClAss 2	\$ 10,681	\$ 58,378	\$ 216,680	1	1	9
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 158,940	\$ 18,604	0	9	2
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 1,235	\$ 791,576	\$ 15,752	1	16	1
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 15,519,284	\$ 30,567,878	\$ 8,750,504	55	141	81
Private Schools	\$ 1,067,576	\$ 2,493,215	\$ 318,458	11	16	4
Private Hospitals	\$ 14,767,412	\$ 0	\$ 0	3	0	0
Homes for Aged	\$ 3,794,588	\$ 2,543,788	\$ 0	2	4	0

DOR Code	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Value in Moderate Damage (10 – 30%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)	Bldgs in Moderate Damage (10 – 30%)
Orphanages	\$ 0	\$ 31,529	\$ 0	0	1	0
Mortuaries, Cemeteries	\$ 582,588	\$ 801,176	\$ 197,105	3	6	1
Clubs, Lodges, and Union Hall	\$ 1,258,717	\$ 1,589,017	\$ 311,311	10	25	8
Sanitariums, Convalescent, an	\$ 361,764	\$ 77,211	\$ 0	3	3	0
Cultural Organizations	\$ 4,010,870	\$ 437,141	\$ 0	5	5	0
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 673,223	\$ 0	0	2	0
Forest, Park, and Recreationa	\$ 17,305	\$ 79,305	\$ 126,776	1	3	3
Public Schools	\$ 0	\$ 23,858,494	\$ 0	0	23	0
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 16,765,059	\$ 1,986,270	0	8	3
Other Counties	\$ 27,471,186	\$ 34,874,756	\$ 0	67	25	0
Other State	\$ 0	\$ 310,541	\$ 88,235	0	6	1
Other Federal	\$ 482,705	\$ 91,796,848	\$ 0	1	8	0
Other Municipal	\$ 408,470	\$ 1,385,154	\$ 449,635	4	11	4
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 52,535	\$ 0	0	1	0
Utilities	\$ 3,571,729	\$ 5,169,361	\$ 945,156	23	31	23
Mining, Petroleum, and Gas La	\$ 0	\$ 10,129	\$ 0	0	1	0
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 4,117	\$ 0	\$ 0	4	0	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 96,117	\$ 12,894	0	6	2

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 4 Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Severe Damage(50 – 80%)	Heavy Damage(30 – 50%)	Moderate Damage (10 – 30%)
TOTAL:	40,578	57,967	19,198

Population in each zone by vulnerability class

DOR Code	Severe Damage(50 – 80%)	Heavy Damage(30 – 50%)	Moderate Damage (10 – 30%)
Total Population	40,578	57,967	19,198
Minority	2,906	6,206	1,809
Elderly (65+)	5,017	6,082	1,873
Disabled	10,628	20,211	8,982
Below Poverty	2,528	6,289	2,465
Single–Parent	1,206	2,073	547

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS Category 4 Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 397,053,440	\$ 376,289,952	\$ 3,159,890,688	4,324	3,786	42,111

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 337,267,168	\$ 230,018,032	\$ 2,155,505,664	3,531	2,539	28,133
Mobile Homes	\$ 4,941,783	\$ 7,444,165	\$ 104,066,112	374	430	6,214
Multi-family	\$ 552,211	\$ 513,364	\$ 19,551,010	3	6	118
Condominia	\$ 8,402,120	\$ 88,323,752	\$ 31,160,910	72	462	377
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 31,223	\$ 0	\$ 0	1	0	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 3,645,346	\$ 1,395,302	\$ 50,445,852	56	22	683
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 8,627	\$ 13,200	\$ 210,174	5	4	32
Stores One--Story	\$ 8,938,223	\$ 2,316,516	\$ 31,402,284	36	33	416
Mixed Use, i e., Store and Of	\$ 74,670	\$ 4,281,384	\$ 3,228,124	3	37	60
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 6,771,223	\$ 796,470	\$ 30,885,450	45	18	142
One--Story Non--Professional Of	\$ 729,117	\$ 640,876	\$ 18,709,494	18	14	258
Multi--Story Non--Professional	\$ 100,129	\$ 285,882	\$ 3,633,047	2	1	4
Professional Service Building	\$ 3,351,706	\$ 1,221,529	\$ 26,434,892	21	9	184
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 794,588	\$ 5,947,424	\$ 4,890,908	5	33	44
Drive-in Restaurants	\$ 398,705	\$ 219,411	\$ 7,452,341	2	1	41
Financial Institutions	\$ 2,721,294	\$ 0	\$ 11,409,988	5	0	30



DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 4,293,847	\$ 707,470	\$ 6,772,578	20	12	158
Service Stations	\$ 161,458	\$ 40,376	\$ 398,117	3	1	8
Automotive Repair, Service, a	\$ 184,717	\$ 296,271	\$ 5,628,790	3	10	90
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 42,882	\$ 50,835	\$ 649,051	1	3	16
Bowling Alleys, Skating Rings	\$ 1,471,882	\$ 0	\$ 460,694	2	0	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 2,711,764	\$ 0	\$ 7,637,075	5	0	22
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 2,352	\$ 4,470	\$ 180,941	1	1	9
Light Manufacturing	\$ 743,282	\$ 267,729	\$ 12,282,190	5	3	70
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
Warehouses, and Distribution	\$ 938,595	\$ 647,801	\$ 12,832,725	21	14	230
Industrial Storage (Fuel, Equ	\$ 28,235	\$ 0	\$ 843,620	1	0	19

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 1,284,627	\$ 1,714,827	\$ 122,783,864	11	14	1,625
Cropland Soil Class 1	\$ 1,035,243	\$ 1,204,027	\$ 196,827,536	25	24	2,424
Cropland Soil Class 2	\$ 0	\$ 10,681	\$ 275,058	0	1	10
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 42,292	\$ 0	\$ 135,251	6	0	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 150,282	\$ 658,282	0	3	15
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 3,560,820	\$ 1,590,127	\$ 49,686,704	19	14	244
Private Schools	\$ 17,647	\$ 62,329	\$ 3,799,274	1	1	29
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 0	\$ 1,262,517	2	0	8
Clubs, Lodges, and Union Hall	\$ 794,717	\$ 58,529	\$ 2,305,800	9	1	33
Sanitariums, Convalescent, an	\$ 361,764	\$ 77,211	\$ 0	3	3	0
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 0	\$ 191,117	1	0	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 1,176	\$ 5,411	\$ 392,188	1	2	4
OtheÔ Federal	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 62,352	\$ 2,180,907	0	2	17
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 295,870	\$ 13,635	\$ 9,376,740	4	1	72
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 1,176	\$ 0	\$ 2,941	1	0	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 4,235	\$ 104,776	0	1	7

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in TAOS Category 4 Flood Zone for SANTA\_ROSA County

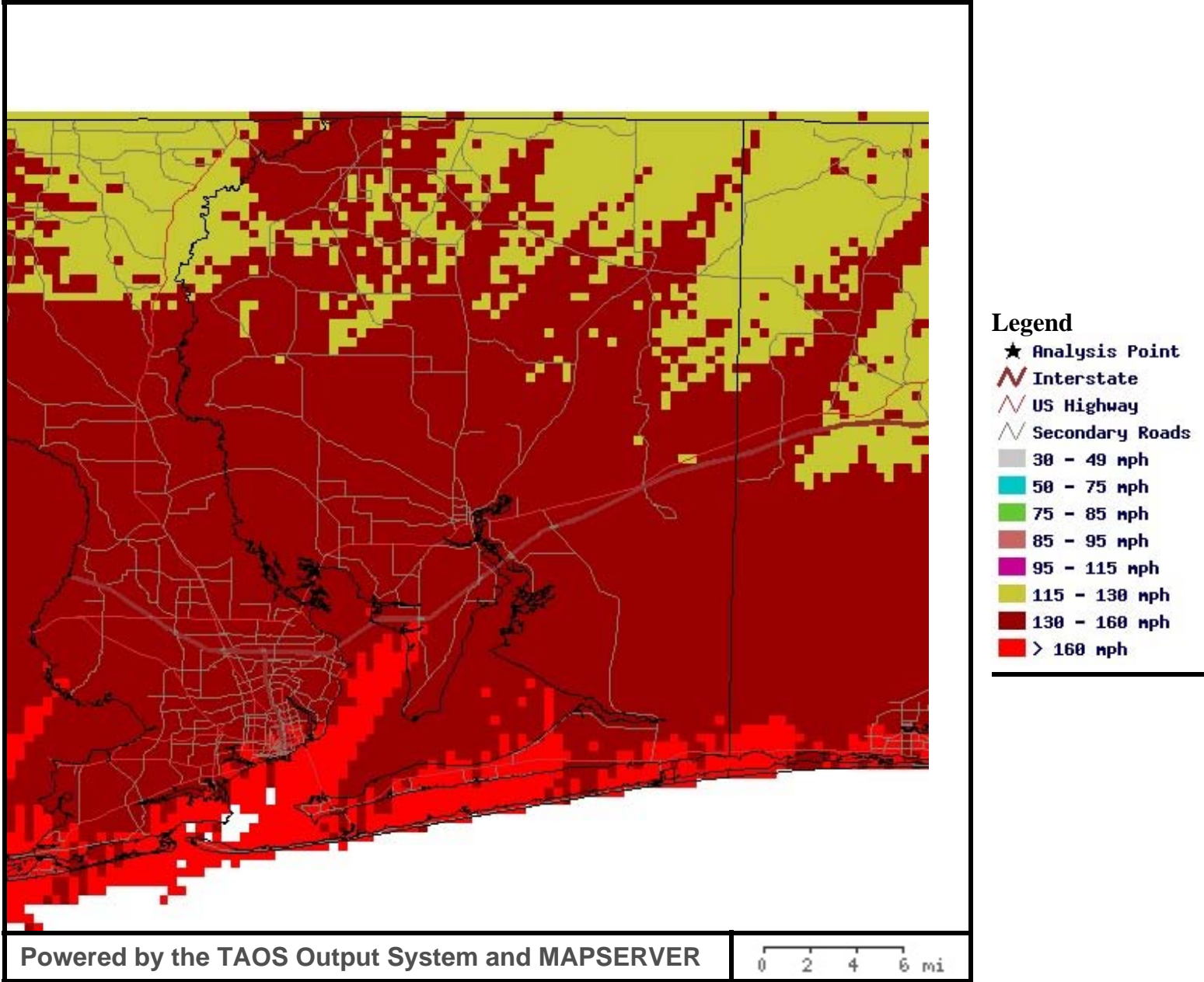
Total Population in each zone

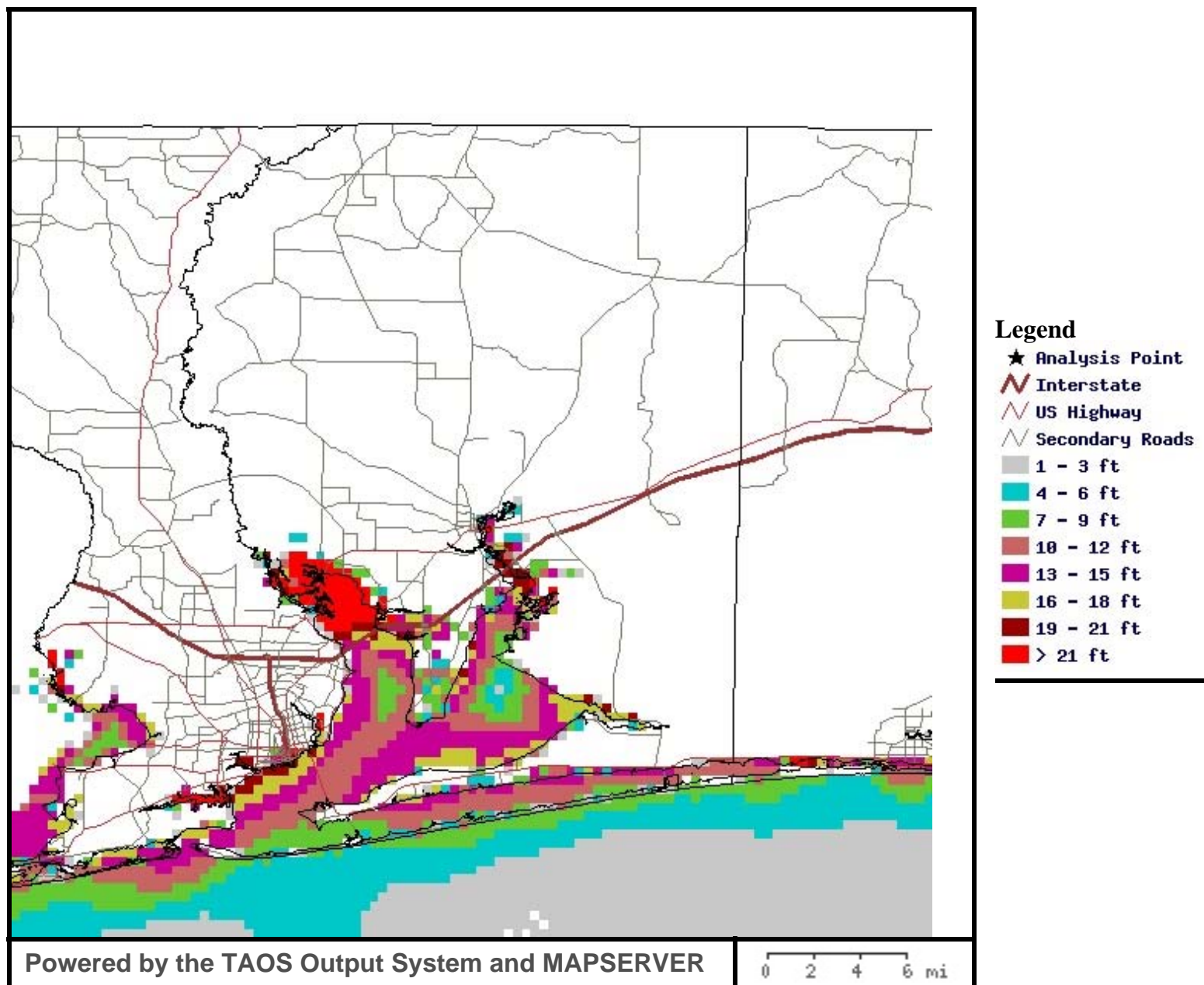
	Wave/Current	Flood	None
TOTAL:	7,145	8,903	101,695

Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	7,145	8,903	101,695
Minority	279	365	10,277
Elderly (65+)	1,180	1,128	10,664
Disabled	1,914	2,289	35,618
Below Poverty	471	596	10,215
Single-Parent	191	237	3,398

**Note:**  
Population estimates from Census 2000.  
See documentation for details.





Based on TAOS composite model simulations.

**Structures in TAOS Category 5 Wind Zone for SANTA\_ROSA County**

	Value in Destroyed ( over 80%)	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Bldgs in Destroyed ( over 80%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)
Total:	\$ 2,177,303,040	\$ 1,448,537,472	\$ 307,375,616	24,859	20,329	5,033

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Destroyed ( over 80%)	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Bldgs in Destroyed ( over 80%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)
Single Family	\$ 1,717,546,624	\$ 917,015,296	\$ 88,236,400	18,602	13,839	1,762
Mobile Homes	\$ 52,838,044	\$ 52,124,672	\$ 11,489,153	3,251	3,136	631
Multi–family	\$ 8,575,518	\$ 12,041,069	\$ 0	51	76	0
Condominia	\$ 127,007,456	\$ 744,235	\$ 135,058	890	19	2
Cooperatives	\$ 0	\$ 165,141	\$ 0	0	2	0
Retirement Homes	\$ 31,223	\$ 0	\$ 0	1	0	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi–family less than 10 un	\$ 28,933,180	\$ 26,462,532	\$ 90,823	382	378	1
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 172,589	\$ 55,882	\$ 3,529	24	15	2
Stores One–Story	\$ 24,226,422	\$ 16,533,938	\$ 1,896,653	191	256	38
Mixed Use, i.e., Store and Of	\$ 6,013,223	\$ 1,521,462	\$ 49,494	58	41	1
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 338,235	\$ 4,835,600	\$ 287,529	2	4	5
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 24,039,496	\$ 14,413,647	\$ 0	149	56	0
One–Story Non–Professional Of	\$ 11,495,694	\$ 8,312,484	\$ 271,309	159	123	8
Multi–Story Non–Professional	\$ 3,621,070	\$ 397,988	\$ 0	5	2	0
Professional Service Building	\$ 15,242,593	\$ 13,463,750	\$ 2,301,779	106	96	12
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 9,212,492	\$ 2,404,146	\$ 16,282	60	20	2
Drive–in Restaurants	\$ 4,900,753	\$ 3,169,705	\$ 0	26	18	0
Financial Institutions	\$ 6,935,200	\$ 7,196,082	\$ 0	20	15	0

DOR Code	Value in Destroyed ( over 80%)	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Bldgs in Destroyed ( over 80%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 7,536,517	\$ 3,532,812	\$ 704,567	103	65	22
Service Stations	\$ 363,811	\$ 236,141	\$ 0	8	4	0
Automotive Repair, Service, a	\$ 2,065,858	\$ 4,027,489	\$ 16,434	48	53	2
Parking Lots, Mobile Home Sal	\$ 0	\$ 6,094	\$ 0	0	2	0
Wholesale, Manufacturing, and	\$ 42,600	\$ 66,588	\$ 5,882	1	1	1
Florist, Greenhouses	\$ 49,929	\$ 236,247	\$ 0	4	5	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	\$ 0	0	1	0
Night Clubs, Bars, and Cockta	\$ 317,199	\$ 370,508	\$ 55,061	8	10	2
Bowling Alleys, Skating Rings	\$ 1,471,882	\$ 460,694	\$ 0	2	1	0
Tourist Attractions	\$ 133,600	\$ 9,317	\$ 0	3	1	0
Camps	\$ 331,482	\$ 348,531	\$ 252,188	8	8	11
Race Horse, Auto, and Dog Tra	\$ 0	\$ 63,952	\$ 0	0	2	0
Golf Courses	\$ 8,198,117	\$ 2,150,722	\$ 0	17	10	0
Hotels, Motels	\$ 5,115,341	\$ 1,263,353	\$ 0	24	11	0
Vacant Industrial	\$ 33,294	\$ 150,588	\$ 3,882	5	4	2
Light Manufacturing	\$ 3,388,556	\$ 9,728,763	\$ 175,882	30	45	3
Heavy Manufacturing	\$ 1,515,435	\$ 8,893,765	\$ 0	2	32	0
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	\$ 0	0	7	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other Food PÖrocessing	\$ 0	\$ 125,764	\$ 30,787	0	1	1
Mineral Processing	\$ 0	\$ 221,094	\$ 890,458	0	6	11
WarehousÇs, and Distribution	\$ 6,761,831	\$ 5,542,815	\$ 2,114,476	124	107	34
Industrial Storage (Fuel, Equ	\$ 788,294	\$ 64,211	\$ 19,349	14	5	1



DOR Code	Value in Destroyed ( over 80%)	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Bldgs in Destroyed ( over 80%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)
Improved Agriculture	\$ 7,533,697	\$ 44,549,736	\$ 73,699,760	84	562	1,004
Cropland Soil Class 1	\$ 6,185,163	\$ 75,824,024	\$ 117,057,496	139	944	1,390
Cropland, Soil Class 2	\$ 10,681	\$ 112,717	\$ 162,341	1	3	7
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 116,647	\$ 42,292	\$ 18,604	3	6	2
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 151,517	\$ 641,294	\$ 15,752	4	13	1
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 23,976,680	\$ 26,394,278	\$ 4,466,705	89	139	49
Private Schools	\$ 1,592,241	\$ 2,287,009	\$ 0	15	16	0
Private Hospitals	\$ 14,767,412	\$ 0	\$ 0	3	0	0
Homes for Aged	\$ 3,794,588	\$ 2,543,788	\$ 0	2	4	0

DOR Code	Value in Destroyed ( over 80%)	Value in Severe Damage(50 – 80%)	Value in Heavy Damage(30 – 50%)	Bldgs in Destroyed ( over 80%)	Bldgs in Severe Damage(50 – 80%)	Bldgs in Heavy Damage(30 – 50%)
Orphanages	\$ 0	\$ 31,529	\$ 0	0	1	0
Mortuaries, Cemeteries	\$ 582,588	\$ 998,282	\$ 0	3	7	0
Clubs, Lodges, and Union Hall	\$ 1,515,797	\$ 1,512,117	\$ 131,131	16	23	4
Sanitariums, Convalescent, an	\$ 361,764	\$ 77,211	\$ 0	3	3	0
Cultural Organizations	\$ 4,010,870	\$ 437,141	\$ 0	5	5	0
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 673,223	\$ 0	0	2	0
Forest, Park, and Recreationa	\$ 49,576	\$ 47,035	\$ 126,776	2	2	3
Public Schools	\$ 0	\$ 23,858,494	\$ 0	0	23	0
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 16,765,059	\$ 1,986,270	0	8	3
Other CountiCs	\$ 27,471,186	\$ 34,874,756	\$ 0	67	25	0
Other State	\$ 7,011	\$ 303,529	\$ 88,235	4	2	1
Other FeAeral	\$ 482,705	\$ 91,796,848	\$ 0	1	8	0
Other Municipal	\$ 408,470	\$ 1,771,848	\$ 62,941	4	13	2
Gov. Owned Leased by Non-Gov.	\$ 0	\$ 52,535	\$ 0	0	1	0
Utilities	\$ 5,024,450	\$ 4,326,792	\$ 335,005	29	36	12
Mining, Petroleum, and Gas La	\$ 10,129	\$ 0	\$ 0	1	0	0
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights-of-Way Streets, Roads,	\$ 4,117	\$ 0	\$ 0	4	0	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 6,588	\$ 102,423	\$ 0	2	6	0

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS Category 5 Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Destroyed (>80%)	Severe Damage(50 – 80%)	Heavy Damage(30 – 50%)
TOTAL:	55,925	50,345	11,473

Population in each zone by vulnerability class

DOR Code	Destroyed (>80%)	Severe Damage(50 – 80%)	Heavy Damage(30 – 50%)
Total Population	55,925	50,345	11,473
Minority	4,128	5,431	1,362
Elderly (65+)	6,505	5,395	1,072
Disabled	16,100	18,851	4,870
Below Poverty	4,342	5,422	1,518
Single–Parent	1,772	1,798	256

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS Category 5 Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 473,784,544	\$ 411,526,528	\$ 3,047,917,312	5,168	4,227	40,826

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 400,728,800	\$ 262,919,328	\$ 2,059,143,040	4,147	2,976	27,080
Mobile Homes	\$ 7,061,287	\$ 6,813,473	\$ 102,577,280	508	409	6,101
Multi-family	\$ 575,741	\$ 2,495,364	\$ 17,545,482	4	15	108
Condominia	\$ 14,462,699	\$ 85,105,544	\$ 28,318,574	102	462	347
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 31,223	\$ 0	0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 3,908,440	\$ 2,177,537	\$ 49,400,524	60	34	667
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 8,627	\$ 14,376	\$ 208,997	5	5	31
Stores One--Story	\$ 9,261,188	\$ 3,092,657	\$ 30,303,176	43	37	405
Mixed Use, i e., Store and Of	\$ 74,670	\$ 4,345,502	\$ 3,164,006	3	38	59
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 6,771,223	\$ 833,929	\$ 30,847,992	45	19	141
One--Story Non--Professional Of	\$ 892,529	\$ 898,935	\$ 18,288,024	20	16	254
Multi--Story Non--Professional	\$ 100,129	\$ 285,882	\$ 3,633,047	2	1	4
Professional Service Building	\$ 3,351,706	\$ 2,337,141	\$ 25,319,278	21	21	172
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 1,638,117	\$ 5,292,412	\$ 4,702,391	17	22	43
Drive-in Restaurants	\$ 398,705	\$ 490,352	\$ 7,181,400	2	2	40
Financial Institutions	\$ 2,721,294	\$ 715,529	\$ 10,694,459	5	4	26

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 4,350,788	\$ 843,823	\$ 6,579,284	21	12	157
Service Stations	\$ 161,458	\$ 40,376	\$ 398,117	3	1	8
Automotive Repair, Service, a	\$ 301,589	\$ 293,941	\$ 5,514,249	7	9	87
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 93,717	\$ 0	\$ 649,051	4	0	16
Bowling Alleys, Skating Rings	\$ 1,471,882	\$ 0	\$ 460,694	2	0	1
Tourist Attractions	\$ 0	\$ 11,247	\$ 131,670	0	2	2
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 2,711,764	\$ 0	\$ 7,637,075	5	0	22
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 2,352	\$ 4,470	\$ 180,941	1	1	9
Light Manufacturing	\$ 841,176	\$ 394,423	\$ 12,057,602	6	3	69
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
Warehouses, and Distribution	\$ 1,391,830	\$ 356,095	\$ 12,671,196	28	9	228
Industrial Storage (Fuel, Equ	\$ 28,235	\$ 460,823	\$ 382,796	1	8	11

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 1,959,242	\$ 1,040,211	\$ 122,783,864	15	10	1,625
Cropland Soil Class 1	\$ 1,367,101	\$ 1,097,316	\$ 196,602,416	33	22	2,418
Cropland Soil Class 2	\$ 0	\$ 10,681	\$ 275,058	0	1	10
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 42,292	\$ 0	\$ 135,251	6	0	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 150,282	\$ 658,282	0	3	15
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 4,046,585	\$ 2,815,656	\$ 47,975,412	24	12	241
Private Schools	\$ 17,647	\$ 62,329	\$ 3,799,274	1	1	29
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 0	\$ 1,262,517	2	0	8
Clubs, Lodges, and Union Hall	\$ 794,717	\$ 58,529	\$ 2,305,800	9	1	33
Sanitariums, Convalescent, an	\$ 361,764	\$ 77,211	\$ 0	3	3	0
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 0	\$ 191,117	1	0	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 1,217,294	\$ 25,765,770	\$ 35,362,872	3	62	27
Other State	\$ 6,588	\$ 0	\$ 392,188	3	0	4
OtheÔ Federal	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 62,352	\$ 2,180,907	0	2	17
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 309,505	\$ 11,764	\$ 9,364,975	5	1	71
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 1,176	\$ 0	\$ 2,941	1	0	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 4,235	\$ 104,776	0	1	7

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in TAOS Category 5 Flood Zone for SANTA\_ROSA County

Total Population in each zone

	Wave/Current	Flood	None
TOTAL:	7,145	9,827	100,771

Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	7,145	9,827	100,771
Minority	279	374	10,268
Elderly (65+)	1,180	1,375	10,417
Disabled	1,914	2,711	35,196
Below Poverty	471	631	10,180
Single-Parent	191	273	3,362

**Note:**  
Population estimates from Census 2000.  
See documentation for details.



Event Based Loss Estimates (Wind) for SANTA\_ROSA County

	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Total:	50,221	\$ 3,933,284,608	\$ 145,980,624	\$ 454,481,152	\$ 1,076,232,832	\$ 2,319,140,096	\$ 3,592,357,120	\$ 96,355,040	\$ 343,061,280	\$ 872,810,944	\$ 1,987,659,904	\$ 3,380,320,256

Value of structures in each zone by DOR Use Code

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Single Family	34,203	\$ 2,722,803,200	\$ 102,158,104	\$ 317,657,760	\$ 752,184,768	\$ 1,637,938,560	\$ 2,554,666,240	\$ 67,590,480	\$ 240,392,560	\$ 611,320,320	\$ 1,397,182,976	\$ 2,417,326,336
Mobile Homes	7,018	\$ 116,452,256	\$ 11,669,537	\$ 32,820,446	\$ 72,016,856	\$ 112,893,792	\$ 116,347,152	\$ 8,028,458	\$ 25,253,010	\$ 58,941,212	\$ 109,067,352	\$ 116,328,544
Multi-family	127	\$ 20,616,586	\$ 670,233	\$ 2,178,635	\$ 5,183,511	\$ 11,651,722	\$ 18,779,076	\$ 434,550	\$ 1,634,394	\$ 4,186,895	\$ 9,904,740	\$ 17,430,258
Condominia	911	\$ 127,886,744	\$ 6,917,836	\$ 19,658,532	\$ 45,324,960	\$ 96,993,784	\$ 127,660,016	\$ 4,782,670	\$ 15,217,483	\$ 37,414,600	\$ 83,667,352	\$ 127,562,360
Cooperatives	2	\$ 165,141	\$ 4,381	\$ 16,594	\$ 33,524	\$ 83,997	\$ 152,443	\$ 2,718	\$ 12,327	\$ 26,565	\$ 70,898	\$ 132,757
Retirement Homes	1	\$ 31,223	\$ 983	\$ 3,318	\$ 7,542	\$ 16,951	\$ 31,223	\$ 627	\$ 2,479	\$ 6,058	\$ 14,362	\$ 27,292
Boarding Homes (Institutional	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Multi-family less than 10 un	761	\$ 55,486,496	\$ 1,942,533	\$ 6,146,070	\$ 14,462,377	\$ 32,438,582	\$ 51,202,744	\$ 1,272,631	\$ 4,629,060	\$ 11,709,750	\$ 27,633,236	\$ 47,989,804
Undefined reserved for DOR	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Vacant Commercial	41	\$ 232,001	\$ 9,202	\$ 29,277	\$ 69,280	\$ 149,725	\$ 218,446	\$ 6,132	\$ 22,310	\$ 56,611	\$ 128,204	\$ 211,364
Stores One-Story	485	\$ 42,657,024	\$ 1,497,225	\$ 4,781,365	\$ 11,345,586	\$ 25,076,372	\$ 39,442,040	\$ 983,027	\$ 3,606,906	\$ 9,199,578	\$ 21,368,254	\$ 37,060,132
Mixed Use, i.e., Store and Of	100	\$ 7,584,179	\$ 353,057	\$ 1,032,983	\$ 2,421,272	\$ 5,210,233	\$ 7,391,396	\$ 240,375	\$ 792,468	\$ 1,986,919	\$ 4,474,326	\$ 7,182,826
Department Stores	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Supermarket	11	\$ 5,461,365	\$ 124,842	\$ 443,017	\$ 1,085,178	\$ 2,686,794	\$ 4,892,243	\$ 75,638	\$ 322,012	\$ 858,800	\$ 2,264,039	\$ 4,263,377
Regional Shopping Malls	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Community Shopping Centers	205	\$ 38,453,140	\$ 1,390,940	\$ 4,448,711	\$ 10,471,685	\$ 23,725,432	\$ 36,415,808	\$ 913,969	\$ 3,359,649	\$ 8,497,266	\$ 20,259,674	\$ 34,632,652
One-Story Non-Professional Of	290	\$ 20,079,492	\$ 698,008	\$ 2,189,643	\$ 5,199,521	\$ 11,446,450	\$ 18,930,108	\$ 456,802	\$ 1,646,344	\$ 4,206,418	\$ 9,734,144	\$ 17,827,246
Multi-Story Non-Professional	7	\$ 4,019,059	\$ 178,104	\$ 559,554	\$ 1,330,387	\$ 2,859,590	\$ 3,970,600	\$ 119,929	\$ 429,497	\$ 1,093,482	\$ 2,459,069	\$ 3,924,748
Professional Service Building	214	\$ 31,008,126	\$ 1,022,931	\$ 3,275,485	\$ 7,957,155	\$ 17,301,570	\$ 27,881,208	\$ 665,381	\$ 2,455,779	\$ 6,433,543	\$ 14,701,284	\$ 25,980,996
Airports, Marinas, Bus Termin	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Restaurants, Cafeterias	82	\$ 11,632,920	\$ 531,859	\$ 1,574,580	\$ 3,671,425	\$ 7,817,641	\$ 11,341,916	\$ 361,270	\$ 1,207,239	\$ 3,010,776	\$ 6,706,072	\$ 11,000,661
Drive-in Restaurants	44	\$ 8,070,460	\$ 299,426	\$ 956,092	\$ 2,235,196	\$ 4,935,340	\$ 7,733,331	\$ 197,544	\$ 723,924	\$ 1,816,219	\$ 4,212,578	\$ 7,273,682
Financial Institutions	35	\$ 14,131,282	\$ 472,539	\$ 1,515,603	\$ 3,643,170	\$ 8,127,503	\$ 13,148,624	\$ 307,968	\$ 1,138,427	\$ 2,947,618	\$ 6,916,714	\$ 12,294,707

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Insurance Company Offices	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Repair Service Shops	190	\$ 11,773,898	\$ 435,306	\$ 1,372,907	\$ 3,222,850	\$ 7,036,930	\$ 10,811,091	\$ 288,304	\$ 1,040,014	\$ 2,619,452	\$ 6,003,195	\$ 10,304,545
Service Stations	12	\$ 599,952	\$ 20,924	\$ 68,229	\$ 164,408	\$ 349,357	\$ 539,903	\$ 13,719	\$ 51,498	\$ 133,574	\$ 297,607	\$ 512,741
Automotive Repair, Service, a	103	\$ 6,109,780	\$ 179,771	\$ 607,864	\$ 1,421,764	\$ 3,226,155	\$ 5,434,475	\$ 114,851	\$ 452,781	\$ 1,141,426	\$ 2,732,083	\$ 4,947,241
Parking Lots, Mobile Home Sal	2	\$ 6,094	\$ 143	\$ 504	\$ 1,315	\$ 2,930	\$ 5,668	\$ 87	\$ 367	\$ 1,047	\$ 2,465	\$ 4,938
Wholesale, Manufacturing, and	3	\$ 115,070	\$ 2,491	\$ 8,591	\$ 21,065	\$ 47,296	\$ 94,033	\$ 1,512	\$ 6,205	\$ 16,592	\$ 39,439	\$ 83,538
Florist, Greenhouses	9	\$ 286,176	\$ 9,402	\$ 30,070	\$ 70,588	\$ 157,996	\$ 283,006	\$ 6,065	\$ 22,474	\$ 56,832	\$ 134,039	\$ 253,538
Drive-in Theaters, Open Stadi	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Enclosed Theaters, Auditorium	1	\$ 588	\$ 4	\$ 23	\$ 73	\$ 167	\$ 385	\$ 2	\$ 15	\$ 55	\$ 136	\$ 329
Night Clubs, Bars, and Cockta	20	\$ 742,769	\$ 23,036	\$ 75,682	\$ 179,435	\$ 398,935	\$ 652,507	\$ 14,892	\$ 56,561	\$ 144,510	\$ 338,268	\$ 595,403
Bowling Alleys, Skating Rings	3	\$ 1,932,576	\$ 76,316	\$ 237,608	\$ 559,375	\$ 1,224,917	\$ 1,821,664	\$ 50,752	\$ 180,565	\$ 456,062	\$ 1,047,442	\$ 1,773,602
Tourist Attractions	4	\$ 142,917	\$ 7,349	\$ 21,071	\$ 46,390	\$ 104,969	\$ 141,090	\$ 5,052	\$ 16,260	\$ 38,078	\$ 90,416	\$ 140,079
Camps	27	\$ 932,202	\$ 28,083	\$ 90,955	\$ 215,824	\$ 494,198	\$ 760,837	\$ 18,220	\$ 67,937	\$ 173,685	\$ 419,277	\$ 700,732
Race Horse, Auto, and Dog Tra	2	\$ 63,952	\$ 1,329	\$ 5,028	\$ 13,380	\$ 29,756	\$ 51,471	\$ 789	\$ 3,636	\$ 10,628	\$ 24,984	\$ 44,531
Golf Courses	27	\$ 10,348,840	\$ 401,308	\$ 1,211,807	\$ 2,943,920	\$ 6,409,709	\$ 10,132,110	\$ 265,936	\$ 915,881	\$ 2,395,283	\$ 5,473,985	\$ 9,653,691
Hotels, Motels	35	\$ 6,378,694	\$ 285,655	\$ 872,835	\$ 1,982,448	\$ 4,203,577	\$ 6,151,997	\$ 193,249	\$ 669,643	\$ 1,623,238	\$ 3,601,761	\$ 5,996,207
Vacant Industrial	11	\$ 187,764	\$ 6,228	\$ 19,680	\$ 46,714	\$ 111,309	\$ 183,997	\$ 4,024	\$ 14,705	\$ 37,633	\$ 94,798	\$ 168,262
Light Manufacturing	78	\$ 13,293,201	\$ 361,773	\$ 1,232,527	\$ 2,960,932	\$ 6,859,462	\$ 12,591,946	\$ 227,072	\$ 909,931	\$ 2,366,944	\$ 5,798,514	\$ 11,262,179
Heavy Manufacturing	34	\$ 10,409,200	\$ 327,801	\$ 1,054,780	\$ 2,517,310	\$ 6,147,796	\$ 10,409,200	\$ 209,308	\$ 784,228	\$ 2,022,222	\$ 5,233,276	\$ 9,370,890
Lumber Yards, Sawmills, Plann	7	\$ 162,705	\$ 4,252	\$ 14,373	\$ 32,853	\$ 84,705	\$ 145,228	\$ 2,632	\$ 10,532	\$ 26,022	\$ 71,594	\$ 126,273
Fruit, Vegetables, and Meat P	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Canneries, Distilleries, and	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Other Food Processing	2	\$ 156,551	\$ 4,213	\$ 13,076	\$ 33,170	\$ 83,869	\$ 139,198	\$ 2,650	\$ 9,560	\$ 26,405	\$ 71,096	\$ 121,095
Mineral Processing	17	\$ 1,111,553	\$ 8,414	\$ 42,392	\$ 127,443	\$ 315,940	\$ 664,544	\$ 3,946	\$ 27,892	\$ 95,950	\$ 256,853	\$ 566,102
Warehouses, and Distribution	265	\$ 14,419,120	\$ 428,685	\$ 1,408,504	\$ 3,350,453	\$ 7,547,567	\$ 12,805,672	\$ 275,585	\$ 1,049,226	\$ 2,691,683	\$ 6,392,237	\$ 11,788,773
Industrial Storage (Fuel, Equ	20	\$ 871,855	\$ 34,922	\$ 107,222	\$ 256,203	\$ 533,205	\$ 855,824	\$ 23,266	\$ 81,460	\$ 209,041	\$ 454,913	\$ 821,834

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Improved Agriculture	1,650	\$ 125,783,312	\$ 1,773,973	\$ 6,938,423	\$ 18,722,476	\$ 43,648,828	\$ 82,923,256	\$ 996,020	\$ 4,839,508	\$ 14,494,693	\$ 36,035,136	\$ 71,416,408
Cropland Soil Class 1	2,473	\$ 199,066,816	\$ 2,648,762	\$ 10,578,484	\$ 28,698,604	\$ 67,204,728	\$ 128,177,552	\$ 1,460,540	\$ 7,331,008	\$ 22,134,992	\$ 55,359,896	\$ 110,129,096
Cropland Soil Class 2	11	\$ 285,740	\$ 4,186	\$ 15,293	\$ 40,650	\$ 97,424	\$ 195,144	\$ 2,379	\$ 10,620	\$ 31,325	\$ 80,357	\$ 168,888
Cropland Soil Class 3	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 1	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 2	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 3	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 4	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 5	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 6	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Orchard, Groves, Citrus	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Poultry, Bees, Tropical Fish,	11	\$ 177,544	\$ 4,575	\$ 15,775	\$ 36,861	\$ 88,553	\$ 169,706	\$ 2,838	\$ 11,587	\$ 29,288	\$ 74,690	\$ 151,944
Dairies, Feed Lots	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Ornamentals, Misc. Agricultur	18	\$ 808,564	\$ 19,573	\$ 59,031	\$ 169,374	\$ 403,124	\$ 737,965	\$ 12,057	\$ 42,514	\$ 134,776	\$ 339,974	\$ 661,433
Vacant Institutional	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Churches	277	\$ 54,837,652	\$ 1,674,596	\$ 5,457,854	\$ 13,182,965	\$ 29,077,178	\$ 49,197,848	\$ 1,077,955	\$ 4,071,424	\$ 10,612,979	\$ 24,639,232	\$ 44,953,268
Private Schools	31	\$ 3,879,250	\$ 119,806	\$ 393,322	\$ 947,011	\$ 2,081,010	\$ 3,417,047	\$ 76,975	\$ 293,419	\$ 762,583	\$ 1,764,143	\$ 3,118,974
Private Hospitals	3	\$ 14,767,412	\$ 708,733	\$ 2,091,531	\$ 4,914,407	\$ 10,463,968	\$ 14,767,412	\$ 481,934	\$ 1,606,843	\$ 4,039,103	\$ 8,994,539	\$ 14,767,412
Homes for Aged	6	\$ 6,338,376	\$ 237,507	\$ 744,712	\$ 1,753,498	\$ 4,216,636	\$ 6,110,462	\$ 156,673	\$ 563,925	\$ 1,425,108	\$ 3,615,682	\$ 5,810,114

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Orphanages	1	\$ 31,529	\$ 764	\$ 2,660	\$ 6,991	\$ 15,002	\$ 28,325	\$ 467	\$ 1,939	\$ 5,578	\$ 12,613	\$ 24,635
Mortuaries, Cemeteries	10	\$ 1,580,870	\$ 48,945	\$ 152,324	\$ 378,655	\$ 849,749	\$ 1,393,713	\$ 31,695	\$ 113,267	\$ 304,794	\$ 720,708	\$ 1,284,786
Clubs, Lodges, and Union Hall	43	\$ 3,159,047	\$ 102,736	\$ 332,664	\$ 788,028	\$ 1,755,126	\$ 2,861,333	\$ 66,752	\$ 249,336	\$ 636,228	\$ 1,490,977	\$ 2,665,751
Sanitariums, Convalescent, an	6	\$ 438,976	\$ 18,877	\$ 59,257	\$ 142,896	\$ 306,095	\$ 438,976	\$ 12,663	\$ 45,374	\$ 117,326	\$ 262,969	\$ 431,130
Cultural Organizations	10	\$ 4,448,012	\$ 198,532	\$ 624,519	\$ 1,434,784	\$ 3,154,211	\$ 4,407,872	\$ 133,817	\$ 479,712	\$ 1,177,119	\$ 2,711,971	\$ 4,356,339
Undefined	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Military	2	\$ 673,223	\$ 13,537	\$ 50,253	\$ 119,119	\$ 269,328	\$ 496,542	\$ 7,986	\$ 36,128	\$ 93,325	\$ 224,040	\$ 427,683
Forest, Park, and Recreationa	7	\$ 223,388	\$ 3,919	\$ 14,163	\$ 34,677	\$ 84,238	\$ 160,821	\$ 2,317	\$ 10,080	\$ 26,988	\$ 69,981	\$ 140,272
Public Schools	23	\$ 23,858,494	\$ 578,722	\$ 2,012,975	\$ 5,290,244	\$ 11,352,682	\$ 21,434,166	\$ 353,510	\$ 1,467,459	\$ 4,221,515	\$ 9,544,789	\$ 18,642,164
Colleges	1	\$ 176,470	\$ 1,646	\$ 8,209	\$ 25,728	\$ 56,525	\$ 92,751	\$ 816	\$ 5,557	\$ 19,817	\$ 46,336	\$ 78,436
Public Hospitals	11	\$ 18,751,330	\$ 387,112	\$ 1,353,075	\$ 3,384,776	\$ 8,203,279	\$ 15,320,254	\$ 230,550	\$ 969,903	\$ 2,657,368	\$ 6,864,956	\$ 13,264,804
Other Counties	92	\$ 62,345,944	\$ 2,400,741	\$ 7,204,520	\$ 17,164,096	\$ 38,290,148	\$ 59,127,712	\$ 1,597,800	\$ 5,449,956	\$ 13,952,807	\$ 32,697,082	\$ 55,018,520
Other State	7	\$ 398,776	\$ 8,167	\$ 31,196	\$ 68,160	\$ 185,533	\$ 308,212	\$ 4,897	\$ 22,647	\$ 53,315	\$ 155,904	\$ 267,068
Other Federal	9	\$ 92,279,552	\$ 2,053,941	\$ 7,355,241	\$ 17,183,606	\$ 44,017,332	\$ 74,454,760	\$ 1,235,609	\$ 5,328,348	\$ 13,521,600	\$ 37,013,768	\$ 64,481,044
Other Municipal	19	\$ 2,243,260	\$ 56,447	\$ 187,087	\$ 447,356	\$ 1,047,687	\$ 1,931,106	\$ 35,187	\$ 136,945	\$ 355,075	\$ 881,351	\$ 1,727,972
Gov. Owned Leased by Non-Gov.	1	\$ 52,535	\$ 957	\$ 4,171	\$ 9,738	\$ 21,776	\$ 38,747	\$ 554	\$ 3,020	\$ 7,659	\$ 18,155	\$ 33,374
Utilities	77	\$ 9,686,245	\$ 321,750	\$ 1,001,248	\$ 2,449,167	\$ 5,464,280	\$ 9,126,488	\$ 209,170	\$ 748,863	\$ 1,978,104	\$ 4,644,450	\$ 8,490,386
Mini	1	\$ 10,129	\$ 346	\$ 1,076	\$ 2,770	\$ 6,049	\$ 10,129	\$ 224	\$ 804	\$ 2,246	\$ 5,152	\$ 9,865
Subsurface Rights	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Rights-of-Way Streets, Roads,	4	\$ 4,117	\$ 199	\$ 609	\$ 1,341	\$ 2,832	\$ 4,117	\$ 136	\$ 469	\$ 1,101	\$ 2,431	\$ 4,071
Rivers, Lakes, and Submerged	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Sewage Disposal, Borrow Pits,	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Outdoor Recreational	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Centrally Assessed	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Acreage not Zoned for Agricul	8	\$ 109,011	\$ 2,315	\$ 7,585	\$ 24,114	\$ 54,024	\$ 89,741	\$ 1,384	\$ 5,415	\$ 19,249	\$ 45,543	\$ 77,968

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Event Based Loss Estimates (Water) for SANTA\_ROSA County

	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Total:	50,221	\$ 3,933,284,608	\$ 233,355,888	\$ 538,418,752	\$ 806,651,968	\$ 912,939,584	\$ 956,923,456	\$ 155,035,728	\$ 452,053,472	\$ 725,725,760	\$ 874,712,192	\$ 932,891,904

Value of structures in each zone by DOR Use Code

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Single Family	34,203	\$ 2,722,803,200	\$ 167,565,040	\$ 384,141,952	\$ 584,130,752	\$ 667,847,680	\$ 704,536,064	\$ 112,926,376	\$ 322,164,928	\$ 525,767,232	\$ 637,767,232	\$ 685,040,192
Mobile Homes	7,018	\$ 116,452,256	\$ 2,262,433	\$ 6,624,191	\$ 12,842,205	\$ 15,601,238	\$ 16,022,186	\$ 1,468,138	\$ 5,414,118	\$ 11,394,324	\$ 15,260,908	\$ 15,758,338
Multi-family	127	\$ 20,616,586	\$ 1,560,611	\$ 2,640,741	\$ 3,716,047	\$ 4,322,411	\$ 4,522,965	\$ 1,108,315	\$ 2,214,670	\$ 3,289,976	\$ 4,119,506	\$ 4,320,059
Condominia	911	\$ 127,886,744	\$ 29,059,078	\$ 69,961,040	\$ 98,538,912	\$ 103,832,320	\$ 105,415,144	\$ 18,617,216	\$ 59,433,924	\$ 89,348,568	\$ 101,461,232	\$ 103,682,552
Cooperatives	2	\$ 165,141	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Retirement Homes	1	\$ 31,223	\$ 18,734	\$ 31,223	\$ 31,223	\$ 31,223	\$ 31,223	\$ 15,611	\$ 31,223	\$ 31,223	\$ 31,223	\$ 31,223
Boarding Homes (Institutional	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Multi-family less than 10 un	761	\$ 55,486,496	\$ 1,903,850	\$ 4,268,085	\$ 6,143,450	\$ 7,093,857	\$ 7,579,360	\$ 1,229,146	\$ 3,553,018	\$ 5,526,718	\$ 6,696,343	\$ 7,285,987
Undefined reserved for DOR	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Vacant Commercial	41	\$ 232,001	\$ 4,246	\$ 10,365	\$ 14,317	\$ 15,532	\$ 16,203	\$ 2,550	\$ 8,550	\$ 13,411	\$ 14,861	\$ 15,532
Stores One-Story	485	\$ 42,657,024	\$ 3,715,746	\$ 7,733,364	\$ 10,242,861	\$ 10,899,267	\$ 11,191,955	\$ 2,661,138	\$ 6,664,002	\$ 9,179,372	\$ 10,653,908	\$ 11,022,244
Mixed Use, i.e., Store and Of	100	\$ 7,584,179	\$ 1,414,563	\$ 3,281,519	\$ 4,644,753	\$ 4,695,983	\$ 4,713,223	\$ 949,484	\$ 2,810,197	\$ 4,204,678	\$ 4,678,743	\$ 4,706,811
Department Stores	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Supermarket	11	\$ 5,461,365	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Regional Shopping Malls	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Community Shopping Centers	205	\$ 38,453,140	\$ 2,170,467	\$ 5,278,559	\$ 7,909,832	\$ 9,605,033	\$ 9,957,025	\$ 1,174,764	\$ 4,282,857	\$ 6,914,132	\$ 9,253,044	\$ 9,927,454
One-Story Non-Professional Of	290	\$ 20,079,492	\$ 424,541	\$ 935,158	\$ 1,458,876	\$ 1,854,541	\$ 2,015,046	\$ 256,588	\$ 776,947	\$ 1,281,603	\$ 1,701,077	\$ 1,939,501
Multi-Story Non-Professional	7	\$ 4,019,059	\$ 20,025	\$ 40,051	\$ 70,090	\$ 90,116	\$ 100,129	\$ 10,012	\$ 30,038	\$ 60,077	\$ 80,103	\$ 90,116
Professional Service Building	214	\$ 31,008,126	\$ 1,980,613	\$ 4,014,609	\$ 5,649,113	\$ 6,666,260	\$ 7,059,834	\$ 1,274,894	\$ 3,324,361	\$ 5,035,237	\$ 6,269,989	\$ 6,718,495
Airports, Marinas, Bus Termin	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Restaurants, Cafeterias	82	\$ 11,632,920	\$ 1,832,835	\$ 4,443,249	\$ 6,545,339	\$ 6,813,242	\$ 6,881,911	\$ 1,180,047	\$ 3,769,294	\$ 5,858,675	\$ 6,731,974	\$ 6,846,998
Drive-in Restaurants	44	\$ 8,070,460	\$ 432,030	\$ 841,849	\$ 1,147,858	\$ 1,264,623	\$ 1,309,458	\$ 301,084	\$ 710,903	\$ 1,048,882	\$ 1,219,788	\$ 1,264,623
Financial Institutions	35	\$ 14,131,282	\$ 1,218,623	\$ 2,533,141	\$ 3,501,529	\$ 3,945,459	\$ 4,131,647	\$ 805,458	\$ 2,119,976	\$ 3,173,282	\$ 3,759,270	\$ 3,989,012

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Insurance Company Offices	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Repair Service Shops	190	\$ 11,773,898	\$ 1,165,007	\$ 2,483,338	\$ 3,609,898	\$ 4,523,981	\$ 4,847,440	\$ 684,788	\$ 1,999,029	\$ 3,154,261	\$ 4,202,559	\$ 4,527,311
Service Stations	12	\$ 599,952	\$ 53,084	\$ 117,847	\$ 164,985	\$ 212,124	\$ 235,694	\$ 29,515	\$ 94,277	\$ 141,416	\$ 188,555	\$ 229,748
Automotive Repair, Service, a	103	\$ 6,109,780	\$ 124,636	\$ 330,287	\$ 523,510	\$ 647,774	\$ 693,998	\$ 73,192	\$ 270,584	\$ 453,097	\$ 608,993	\$ 678,429
Parking Lots, Mobile Home Sal	2	\$ 6,094	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Wholesale, Manufacturing, and	3	\$ 115,070	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Florist, Greenhouses	9	\$ 286,176	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Drive-in Theaters, Open Stadi	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Enclosed Theaters, Auditorium	1	\$ 588	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Night Clubs, Bars, and Cockta	20	\$ 742,769	\$ 12,864	\$ 30,017	\$ 53,049	\$ 73,383	\$ 78,467	\$ 8,576	\$ 25,729	\$ 43,677	\$ 68,300	\$ 73,383
Bowling Alleys, Skating Rings	3	\$ 1,932,576	\$ 294,376	\$ 720,211	\$ 1,014,588	\$ 1,390,423	\$ 1,471,882	\$ 147,188	\$ 573,023	\$ 867,400	\$ 1,243,235	\$ 1,324,694
Tourist Attractions	4	\$ 142,917	\$ 447	\$ 3,360	\$ 7,411	\$ 10,569	\$ 11,247	\$ 0	\$ 2,235	\$ 6,287	\$ 9,444	\$ 11,247
Camps	27	\$ 932,202	\$ 0	\$ 0	\$ 0	\$ 1,863	\$ 3,727	\$ 0	\$ 0	\$ 0	\$ 1,256	\$ 3,120
Race Horse, Auto, and Dog Tra	2	\$ 63,952	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Golf Courses	27	\$ 10,348,840	\$ 1,084,705	\$ 2,169,411	\$ 2,711,764	\$ 2,711,764	\$ 2,711,764	\$ 813,529	\$ 1,898,235	\$ 2,711,764	\$ 2,711,764	\$ 2,711,764
Hotels, Motels	35	\$ 6,378,694	\$ 54,211	\$ 135,529	\$ 189,741	\$ 243,952	\$ 271,058	\$ 27,105	\$ 108,423	\$ 162,635	\$ 216,847	\$ 271,058
Vacant Industrial	11	\$ 187,764	\$ 1,600	\$ 4,329	\$ 6,376	\$ 6,823	\$ 6,823	\$ 917	\$ 3,647	\$ 5,694	\$ 6,823	\$ 6,823
Light Manufacturing	78	\$ 13,293,201	\$ 410,337	\$ 914,825	\$ 1,309,038	\$ 1,386,963	\$ 1,430,663	\$ 282,790	\$ 774,970	\$ 1,223,751	\$ 1,353,967	\$ 1,420,636
Heavy Manufacturing	34	\$ 10,409,200	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Lumber Yards, Sawmills, Plann	7	\$ 162,705	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Fruit, Vegetables, and Meat P	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Canneries, Distilleries, and	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Other Food Processing	2	\$ 156,551	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Mineral Processing	17	\$ 1,111,553	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Warehouses, and Distribution	265	\$ 14,419,120	\$ 528,319	\$ 1,043,714	\$ 1,459,850	\$ 1,544,318	\$ 1,562,701	\$ 381,710	\$ 899,055	\$ 1,339,196	\$ 1,516,848	\$ 1,543,135
Industrial Storage (Fuel, Equ	20	\$ 871,855	\$ 40,535	\$ 119,752	\$ 304,058	\$ 458,882	\$ 497,588	\$ 29,482	\$ 69,994	\$ 254,300	\$ 420,176	\$ 497,588

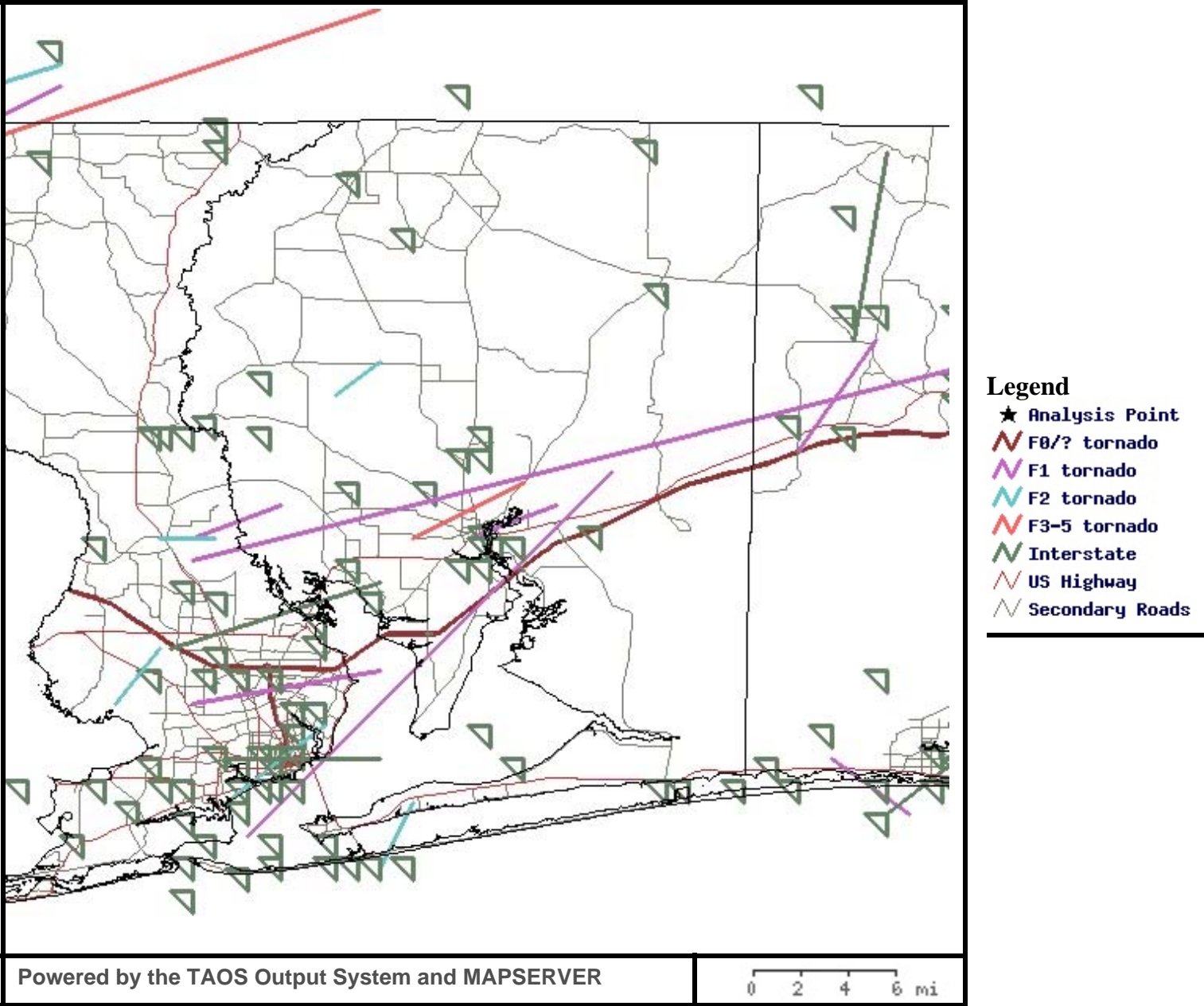
DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Improved Agriculture	1,650	\$ 125,783,312	\$ 234,975	\$ 675,330	\$ 1,622,125	\$ 2,377,883	\$ 2,575,303	\$ 128,220	\$ 524,968	\$ 1,350,132	\$ 2,121,061	\$ 2,471,237
Cropland Soil Class 1	2,473	\$ 199,066,816	\$ 402,771	\$ 1,126,982	\$ 1,758,977	\$ 2,451,549	\$ 2,649,792	\$ 259,993	\$ 947,565	\$ 1,535,431	\$ 2,259,961	\$ 2,570,434
Cropland Soil Class 2	11	\$ 285,740	\$ 3,204	\$ 5,340	\$ 7,476	\$ 9,613	\$ 10,681	\$ 2,136	\$ 4,272	\$ 6,408	\$ 8,544	\$ 10,681
Cropland Soil Class 3	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 1	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 2	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 3	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 4	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 5	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 6	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Orchard, Groves, Citrus	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Poultry, Bees, Tropical Fish,	11	\$ 177,544	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Dairies, Feed Lots	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Ornamentals, Misc. Agricultur	18	\$ 808,564	\$ 0	\$ 60,112	\$ 150,282	\$ 150,282	\$ 150,282	\$ 0	\$ 45,084	\$ 135,254	\$ 150,282	\$ 150,282
Vacant Institutional	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Churches	277	\$ 54,837,652	\$ 1,458,082	\$ 3,056,054	\$ 4,621,522	\$ 5,511,549	\$ 5,815,255	\$ 919,331	\$ 2,517,303	\$ 4,056,507	\$ 5,208,301	\$ 5,586,126
Private Schools	31	\$ 3,879,250	\$ 104,532	\$ 205,351	\$ 276,165	\$ 328,102	\$ 354,070	\$ 69,125	\$ 169,944	\$ 250,197	\$ 302,134	\$ 339,229
Private Hospitals	3	\$ 14,767,412	\$ 2,344,470	\$ 5,861,176	\$ 8,205,647	\$ 10,550,117	\$ 11,722,353	\$ 1,172,235	\$ 4,688,941	\$ 7,033,412	\$ 9,377,883	\$ 11,722,353
Homes for Aged	6	\$ 6,338,376	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

DOR Code	Total Structures	Total Exposure	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	Cat 1 Mit	Cat 2 Mit	Cat 3 Mit	Cat 4 Mit	Cat 5 Mit
Orphanages	1	\$ 31,529	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Mortuaries, Cemeteries	10	\$ 1,580,870	\$ 95,505	\$ 222,847	\$ 318,352	\$ 318,352	\$ 318,352	\$ 63,670	\$ 191,011	\$ 286,517	\$ 318,352	\$ 318,352
Clubs, Lodges, and Union Hall	43	\$ 3,159,047	\$ 203,170	\$ 475,411	\$ 772,357	\$ 901,211	\$ 904,776	\$ 135,004	\$ 407,557	\$ 693,080	\$ 857,138	\$ 875,152
Sanitariums, Convalescent, an	6	\$ 438,976	\$ 144,705	\$ 253,235	\$ 361,764	\$ 361,764	\$ 361,764	\$ 108,529	\$ 217,058	\$ 361,764	\$ 361,764	\$ 361,764
Cultural Organizations	10	\$ 4,448,012	\$ 734,352	\$ 1,835,882	\$ 2,570,235	\$ 3,304,588	\$ 3,671,764	\$ 367,176	\$ 1,468,705	\$ 2,203,059	\$ 2,937,411	\$ 3,671,764
Undefined	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Military	2	\$ 673,223	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Forest, Park, and Recreationa	7	\$ 223,388	\$ 0	\$ 32,270	\$ 32,270	\$ 32,270	\$ 32,270	\$ 0	\$ 32,270	\$ 32,270	\$ 32,270	\$ 32,270
Public Schools	23	\$ 23,858,494	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Colleges	1	\$ 176,470	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Public Hospitals	11	\$ 18,751,330	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Other Counties	92	\$ 62,345,944	\$ 7,987,622	\$ 19,119,868	\$ 27,028,982	\$ 27,578,844	\$ 27,671,186	\$ 5,196,975	\$ 16,329,223	\$ 24,440,040	\$ 27,363,186	\$ 27,502,398
Other State	7	\$ 398,776	\$ 0	\$ 1,082	\$ 3,289	\$ 5,124	\$ 5,792	\$ 0	\$ 541	\$ 2,705	\$ 4,541	\$ 5,750
Other Federal	9	\$ 92,279,552	\$ 96,541	\$ 241,352	\$ 337,894	\$ 434,435	\$ 482,705	\$ 48,270	\$ 193,082	\$ 289,623	\$ 386,164	\$ 482,705
Other Municipal	19	\$ 2,243,260	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Gov. Owned Leased by Non-Gov.	1	\$ 52,535	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Utilities	77	\$ 9,686,245	\$ 192,169	\$ 393,928	\$ 640,950	\$ 832,091	\$ 889,902	\$ 104,678	\$ 287,875	\$ 557,132	\$ 775,127	\$ 853,667
Mini	1	\$ 10,129	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Subsurface Rights	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Rights-of-Way Streets, Roads,	4	\$ 4,117	\$ 470	\$ 1,117	\$ 1,529	\$ 1,529	\$ 1,529	\$ 352	\$ 823	\$ 1,352	\$ 1,352	\$ 1,352
Rivers, Lakes, and Submerged	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Sewage Disposal, Borrow Pits,	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Outdoor Recreational	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Centrally Assessed	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Acreage not Zoned for Agricul	8	\$ 109,011	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.





Tornado tracks reported by the National Weather Service, 1950–2002.  
Triangles indicate touchdowns; lines indicate damage swaths.

Structures in Tornado Risk for SANTA\_ROSA County

	Value in 1 in 500	Value in 1 in 200	Bldgs in 1 in 500	Bldgs in 1 in 200
Total:	\$ 2,929,098,752	\$ 1,004,161,856	36,596	13,625

Value of structures in each zone by DOR Use Code

DOR Code	Value in 1 in 500	Value in 1 in 200	Bldgs in 1 in 500	Bldgs in 1 in 200
Single Family	\$ 2,069,815,424	\$ 652,980,032	25,686	8,517
Mobile Homes	\$ 96,710,312	\$ 19,741,882	5,831	1,187
Multi-family	\$ 15,424,692	\$ 5,191,894	101	26
Condominia	\$ 127,178,392	\$ 708,353	892	19
Cooperatives	\$ 165,141	\$ 0	2	0
Retirement Homes	\$ 31,223	\$ 0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 42,613,092	\$ 12,873,440	593	168
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 192,507	\$ 39,494	34	7
Stores One-Story	\$ 35,120,304	\$ 7,536,717	334	151
Mixed Use, i.e., Store and Of	\$ 7,019,043	\$ 565,136	90	10
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 5,173,835	\$ 287,529	6	5
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 34,075,732	\$ 4,377,412	171	34
One-Story Non-Professional Of	\$ 17,018,014	\$ 3,061,471	245	45
Multi-Story Non-Professional	\$ 4,019,059	\$ 0	7	0
Professional Service Building	\$ 22,690,674	\$ 8,317,452	158	56
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 11,214,680	\$ 418,240	73	9
Drive-in Restaurants	\$ 7,690,048	\$ 380,411	40	4
Financial Institutions	\$ 11,088,330	\$ 3,042,953	30	5

DOR Code	Value in 1 in 500	Value in 1 in 200	Bldgs in 1 in 500	Bldgs in 1 in 200
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 10,023,298	\$ 1,750,600	146	44
Service Stations	\$ 404,188	\$ 195,764	9	3
Automotive Repair, Service, a	\$ 4,412,354	\$ 1,697,428	80	23
Parking Lots, Mobile Home Sal	\$ 6,094	\$ 0	2	0
Wholesale, Manufacturing, and	\$ 42,600	\$ 72,470	1	2
Florist, Greenhouses	\$ 164,658	\$ 121,517	5	4
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	0	1
Night Clubs, Bars, and Cockta	\$ 654,054	\$ 88,715	16	4
Bowling Alleys, Skating Rings	\$ 1,932,576	\$ 0	3	0
Tourist Attractions	\$ 133,600	\$ 9,317	3	1
Camps	\$ 653,849	\$ 278,352	15	12
Race Horse, Auto, and Dog Tra	\$ 63,952	\$ 0	2	0
Golf Courses	\$ 8,198,117	\$ 2,150,722	17	10
Hotels, Motels	\$ 6,292,000	\$ 86,694	34	1
Vacant Industrial	\$ 179,529	\$ 8,235	8	3
Light Manufacturing	\$ 12,639,090	\$ 654,111	66	12
Heavy Manufacturing	\$ 10,409,200	\$ 0	34	0
Lumber Yards, Sawmills, Plann	\$ 152,705	\$ 10,000	6	1
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other FoNd Processing	\$ 125,764	\$ 30,787	1	1
Mineral Processing	\$ 691,882	\$ 419,670	1	16
WarehousCs, and Distribution	\$ 10,107,469	\$ 4,311,651	178	87
Industrial Storage (Fuel, Equ	\$ 592,702	\$ 279,152	14	6

DOR Code	Value in 1 in 500	Value in 1 in 200	Bldgs in 1 in 500	Bldgs in 1 in 200
Improved Agriculture	\$ 32,166,400	\$ 93,616,832	431	1,219
Cropland Soil Class 1	\$ 55,544,908	\$ 143,521,856	715	1,758
Cropland, Soil Class 2	\$ 222,681	\$ 63,058	6	5
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 158,940	\$ 18,604	9	2
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 792,811	\$ 15,752	17	1
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 41,357,612	\$ 13,480,046	182	95
Private Schools	\$ 2,090,085	\$ 1,789,164	21	10
Private Hospitals	\$ 14,767,412	\$ 0	3	0
Homes for Aged	\$ 6,002,482	\$ 335,894	4	2

DOR Code	Value in 1 in 500	Value in 1 in 200	Bldgs in 1 in 500	Bldgs in 1 in 200
Orphanages	\$ 31,529	\$ 0	1	0
Mortuaries, Cemeteries	\$ 1,138,353	\$ 442,517	8	2
Clubs, Lodges, and Union Hall	\$ 2,755,206	\$ 403,841	35	8
Sanitariums, Convalescent, an	\$ 438,976	\$ 0	6	0
Cultural Organizations	\$ 4,344,600	\$ 103,411	9	1
Undefined	\$ 0	\$ 0	0	0
Military	\$ 0	\$ 673,223	0	2
Forest, Park, and Recreationa	\$ 171,905	\$ 51,482	6	1
Public Schools	\$ 23,858,494	\$ 0	23	0
Colleges	\$ 0	\$ 176,470	0	1
Public Hospitals	\$ 3,321,176	\$ 15,430,153	2	9
Other Co×nties	\$ 62,345,944	\$ 0	92	0
Other State	\$ 301,129	\$ 97,647	5	2
Other FeÆeral	\$ 92,279,552	\$ 0	9	0
Other Municipal	\$ 1,516,348	\$ 726,911	13	6
Gov. Owned Leased by Non–Gov.	\$ 52,535	\$ 0	1	0
Utilities	\$ 8,160,024	\$ 1,526,222	52	25
Mining, Petroleum, and Gas La	\$ 10,129	\$ 0	1	0
Subsurface Rights	\$ 0	\$ 0	0	0
Rights–of–Way Streets, Roads,	\$ 4,117	\$ 0	4	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 106,070	\$ 2,941	6	2

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in Tornado Risk for SANTA\_ROSA County

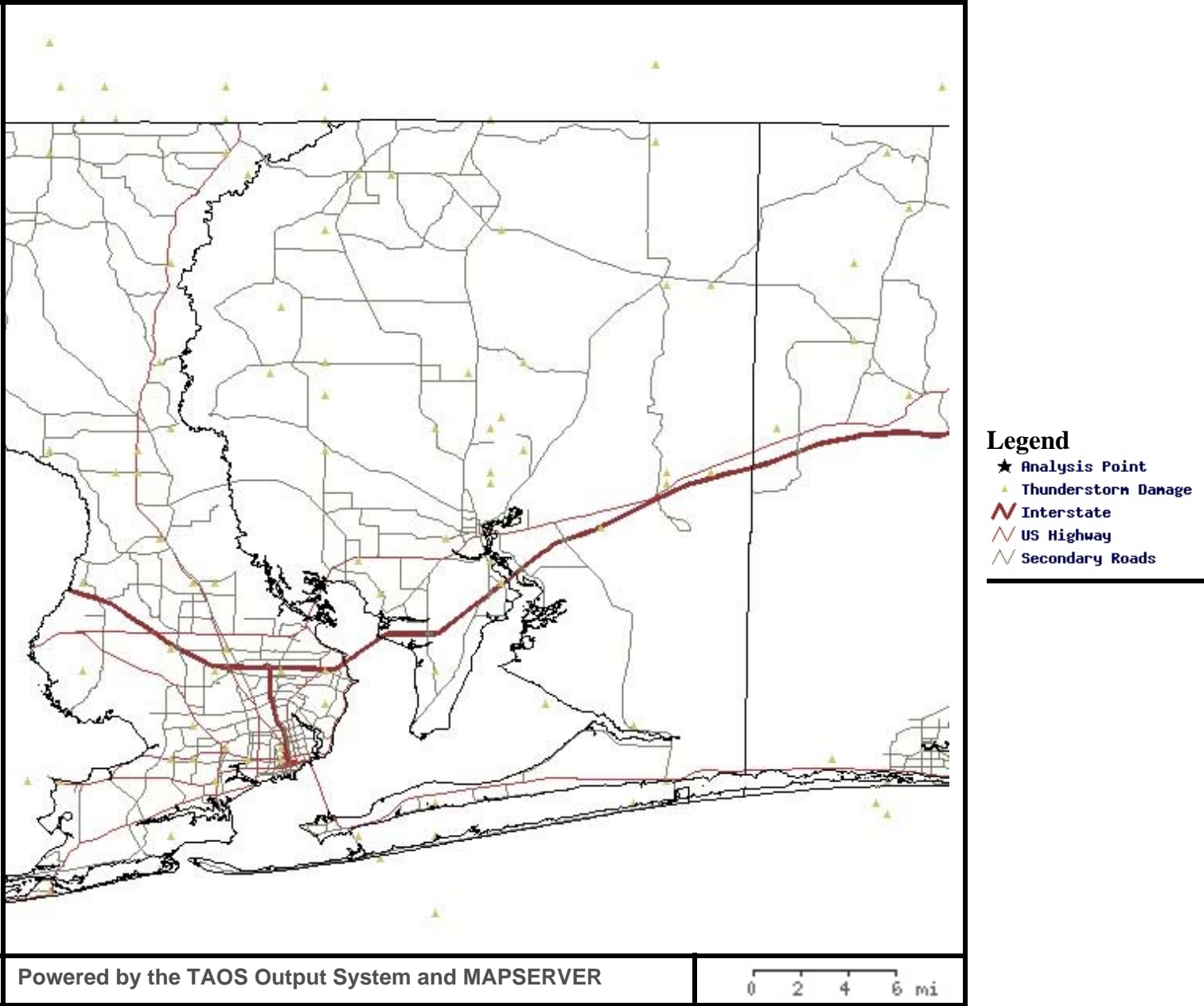
Total Population in each zone

	1 in 500	1 in 200
TOTAL:	89,599	28,144

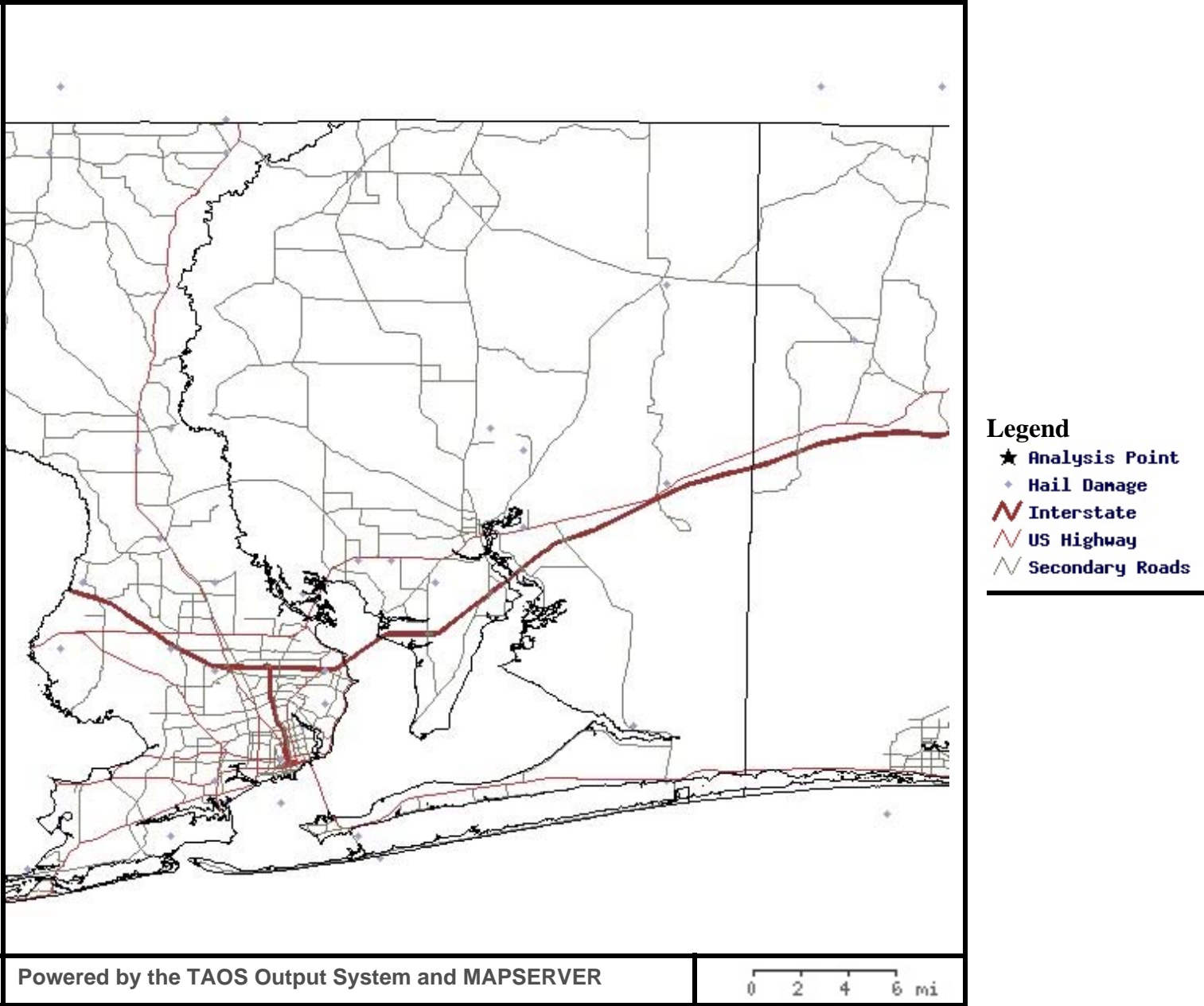
Population in each zone by vulnerability class

DOR Code	1 in 500	1 in 200
Total Population	89,599	28,144
Minority	8,878	2,043
Elderly (65+)	9,733	3,239
Disabled	28,395	11,426
Below Poverty	8,321	2,961
Single-Parent	3,083	743

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

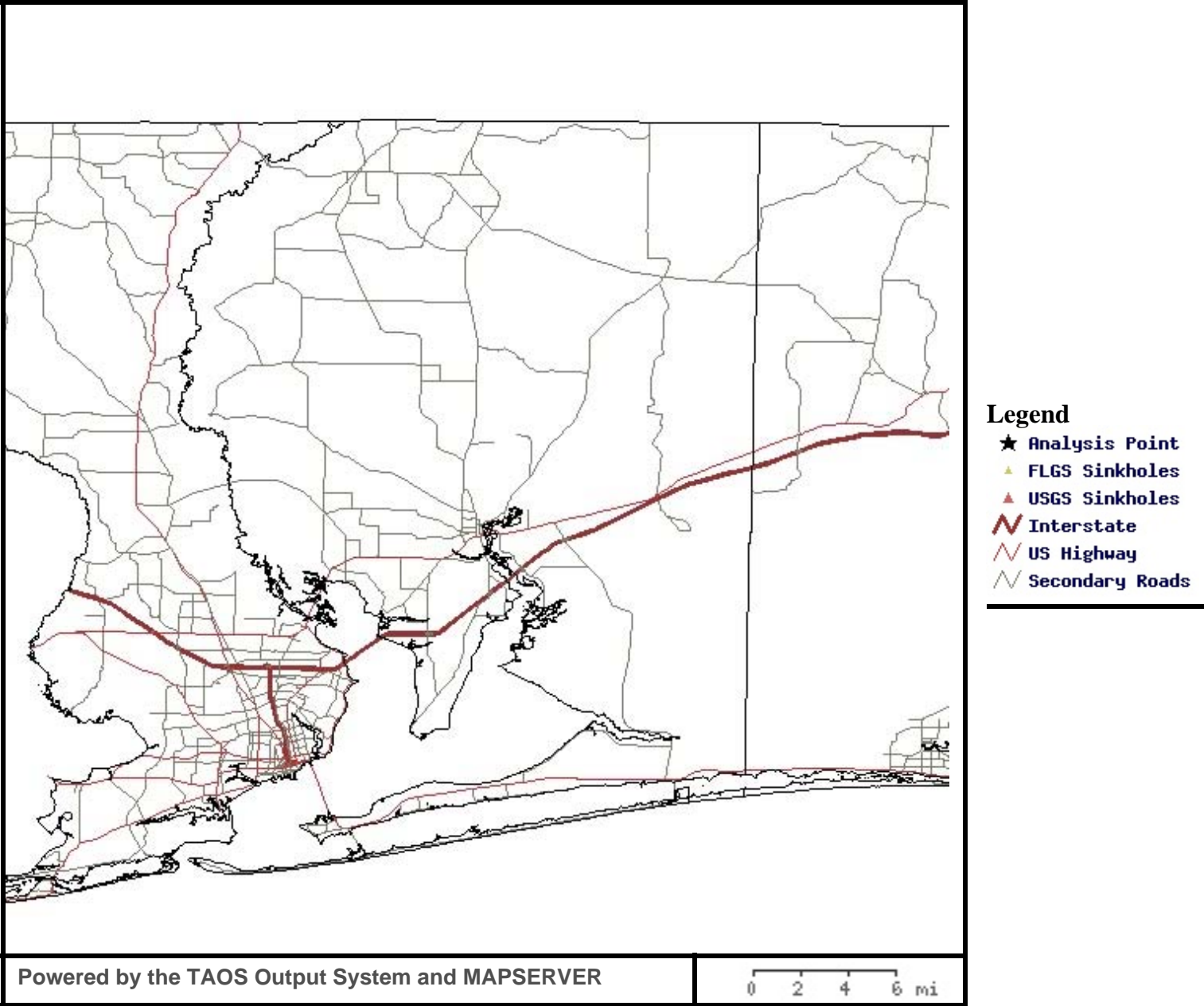


Thunderstorm damage reports from NWS, 1955–2002. Damage costs are included in ELVIS 100 year Loss Costs.



Hail damage reports from NWS, 1955–2002. Damage costs are included in ELVIS 100 year Loss Costs.





Sinkhole locations and surface geology from US Geological Survey.

Structures in Sinkhole Potential for SANTA\_ROSA County

	Value in Very Low	Bldgs in Very Low
Total:	\$ 3,933,284,608	50,221

Value of structures in each zone by DOR Use Code

DOR Code	Value in Very Low	Bldgs in Very Low
Single Family	\$ 2,722,803,200	34,203
Mobile Homes	\$ 116,452,256	7,018
Multi-family	\$ 20,616,586	127
Condominia	\$ 127,886,744	911
Cooperatives	\$ 165,141	2
Retirement Homes	\$ 31,223	1
Boarding Homes (Institutional	\$ 0	0
Multi-family less than 10 un	\$ 55,486,496	761
Undefined reserved for DOR	\$ 0	0
Vacant Commercial	\$ 232,001	41
Stores One-Story	\$ 42,657,024	485
Mixe/E Use, i.e., Store and Of	\$ 7,584,179	100
Department Stores	\$ 0	0
Supermarket	\$ 5,461,365	11
Regional Shopping Malls	\$ 0	0
Community Shopping Centers	\$ 38,453,140	205
One-Story Non-Professional Of	\$ 20,079,492	290
Multi-Story Non-Professional	\$ 4,019,059	7
Professional Service Building	\$ 31,008,126	214
Airports, Marinas, Bus Termin	\$ 0	0
Restaurants, Cafeterias	\$ 11,632,920	82
Drive-in Restaurants	\$ 8,070,460	44
Financial Institutions	\$ 14,131,282	35

DOR Code	Value in Very Low	Bldgs in Very Low
Insurance Company Offices	\$ 0	0
Repair Service Shops	\$ 11,773,898	190
Service Stations	\$ 599,952	12
Automotive Repair, Service, a	\$ 6,109,780	103
Parking Lots, Mobile Home Sal	\$ 6,094	2
Wholesale, Manufacturing, and	\$ 115,070	3
Florist, Greenhouses	\$ 286,176	9
Drive-in Theaters, Open Stadi	\$ 0	0
Enclosed Theaters, Auditorium	\$ 588	1
Night Clubs, Bars, and Cockta	\$ 742,769	20
Bowling Alleys, Skating Rings	\$ 1,932,576	3
Tourist Attractions	\$ 142,917	4
Camps	\$ 932,202	27
Race Horse, Auto, and Dog Tra	\$ 63,952	2
Golf Courses	\$ 10,348,840	27
Hotels, Motels	\$ 6,378,694	35
Vacant Industrial	\$ 187,764	11
Light Manufacturing	\$ 13,293,201	78
Heavy Manufacturing	\$ 10,409,200	34
Lumber Yards, Sawmills, Plann	\$ 162,705	7
Fruit, Vegetables, and Meat P	\$ 0	0
Canneries, Distilleries, and	\$ 0	0
Other Food Processing	\$ 156,551	2
Mineral Processing	\$ 1,111,553	17
Warehouses, and Distribution	\$ 14,419,120	265
Industrial Storage (Fuel, Equ	\$ 871,855	20

DOR Code	Value in Very Low	Bldgs in Very Low
Improved Agriculture	\$ 125,783,312	1,650
Cropland Soil Class 1	\$ 199,066,816	2,473
Cropland Soil Class 2	\$ 285,740	11
Cropland Soil Class 3	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Grazing Land Soil Class 1	\$ 0	0
Grazing Land Soil Class 2	\$ 0	0
Grazing Land Soil Class 3	\$ 0	0
Grazing Land Soil Class 4	\$ 0	0
Grazing Land Soil Class 5	\$ 0	0
Grazing Land Soil Class 6	\$ 0	0
Orchard, Groves, Citrus	\$ 0	0
Poultry, Bees, Tropical Fish,	\$ 177,544	11
Dairies, Feed Lots	\$ 0	0
Ornamentals, Misc. Agricultur	\$ 808,564	18
Vacant Institutional	\$ 0	0
Churches	\$ 54,837,652	277
Private Schools	\$ 3,879,250	31
Private Hospitals	\$ 14,767,412	3
Homes for Aged	\$ 6,338,376	6

DOR Code	Value in Very Low	Bldgs in Very Low
Orphanages	\$ 31,529	1
Mortuaries, Cemeteries	\$ 1,580,870	10
Clubs, Lodges, and Union Hall	\$ 3,159,047	43
Sanitariums, Convalescent, an	\$ 438,976	6
Cultural Organizations	\$ 4,448,012	10
Undefined	\$ 0	0
Military	\$ 673,223	2
Forest, Park, and Recreationa	\$ 223,388	7
Public Schools	\$ 23,858,494	23
Colleges	\$ 176,470	1
Public Hospitals	\$ 18,751,330	11
Otheô Counties	\$ 62,345,944	92
Other State	\$ 398,776	7
Otheô Federal	\$ 92,279,552	9
Other Municipal	\$ 2,243,260	19
Gov. Owned Leased by Non-Gov.	\$ 52,535	1
Utilities	\$ 9,686,245	77
Mining, Petroleum, and Gas La	\$ 10,129	1
Subsurface Rights	\$ 0	0
Rights-of-Way Streets, Roads,	\$ 4,117	4
Rivers, Lakes, and Submerged	\$ 0	0
Sewage Disposal, Borrow Pits,	\$ 0	0
Outdoor Recreational	\$ 0	0
Centrally Assessed	\$ 0	0
Acreage not Zoned for Agricul	\$ 109,011	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in Sinkhole Potential for SANTA\_ROSA County

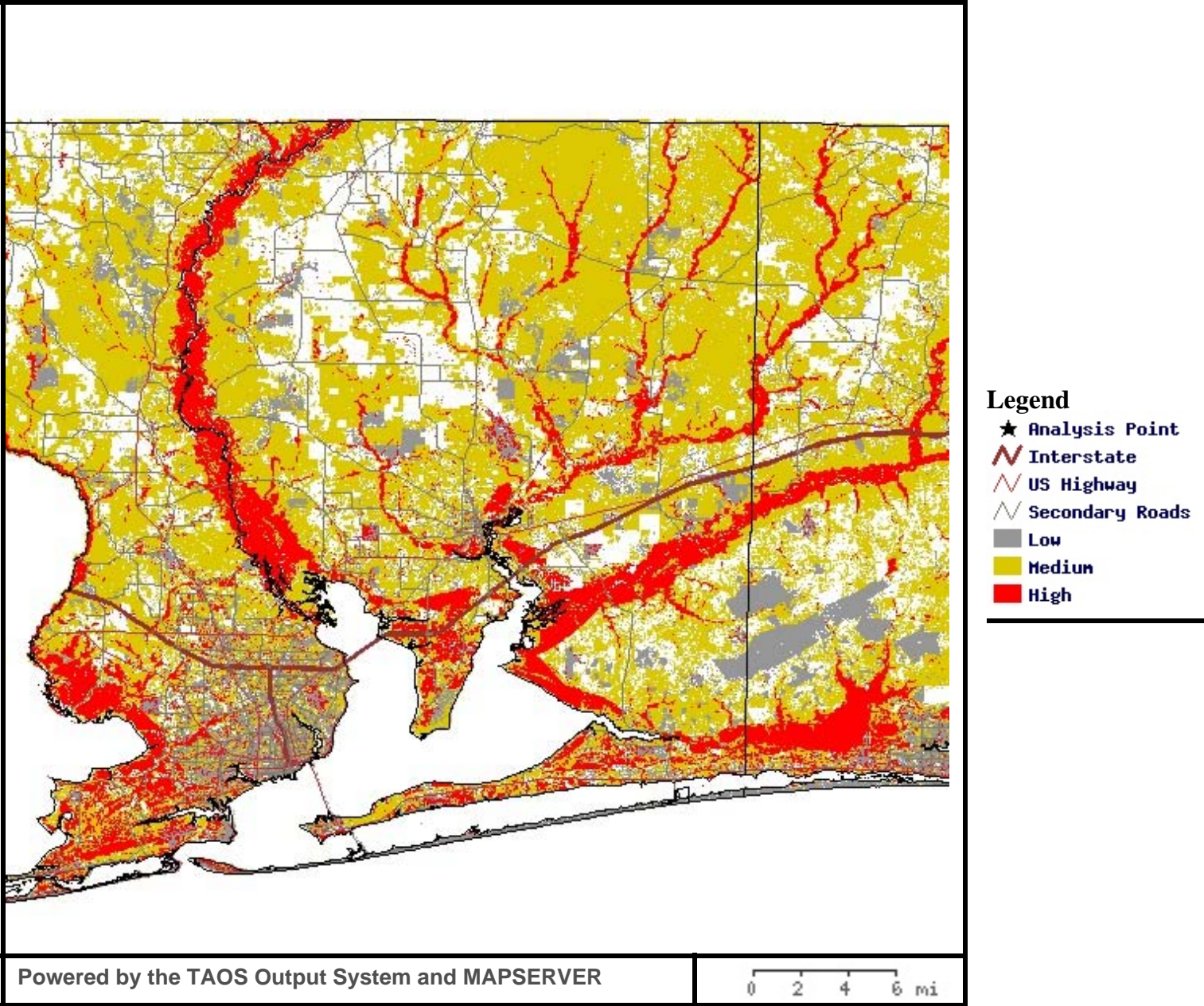
Total Population in each zone

	Very Low
TOTAL:	117,743

Population in each zone by vulnerability class

DOR Code	Very Low
Total Population	117,743
Minority	10,921
Elderly (65+)	12,972
Disabled	39,821
Below Poverty	11,282
Single-Parent	3,826

**Note:**  
Population estimates from Census 2000.  
See documentation for details.



Based on US Forest Service National Fire Danger Rating System.

Structures in Wildfire Potential for SANTA\_ROSA County

	Value in Low	Value in Medium	Value in High	Bldgs in Low	Bldgs in Medium	Bldgs in High
Total:	\$ 1,858,345,600	\$ 1,591,850,624	\$ 483,017,600	22,975	21,483	5,763

Value of structures in each zone by DOR Use Code

DOR Code	Value in Low	Value in Medium	Value in High	Bldgs in Low	Bldgs in Medium	Bldgs in High
Single Family	\$ 1,131,247,872	\$ 1,196,521,088	\$ 395,029,760	14,789	14,981	4,433
Mobile Homes	\$ 56,805,324	\$ 48,754,620	\$ 10,891,908	3,267	3,080	671
Multi-family	\$ 10,441,610	\$ 8,684,976	\$ 1,490,000	76	42	9
Condominia	\$ 109,790,760	\$ 13,446,473	\$ 4,649,646	708	140	63
Cooperatives	\$ 165,141	\$ 0	\$ 0	2	0	0
Retirement Homes	\$ 0	\$ 0	\$ 31,223	0	0	1
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 29,275,746	\$ 19,990,412	\$ 6,220,365	381	295	85
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 63,260	\$ 63,447	\$ 105,294	21	16	4
Stores One-Story	\$ 18,412,476	\$ 21,557,928	\$ 2,686,611	252	203	30
Mixed Use, i.e., Store and Of	\$ 4,908,324	\$ 1,749,855	\$ 926,000	55	37	8
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 1,198,305	\$ 4,263,059	\$ 0	7	4	0
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 26,579,942	\$ 10,419,541	\$ 1,453,658	118	59	28
One-Story Non-Professional Of	\$ 11,786,188	\$ 7,077,287	\$ 1,216,011	169	105	16
Multi-Story Non-Professional	\$ 3,426,117	\$ 592,941	\$ 0	2	5	0
Professional Service Building	\$ 16,160,041	\$ 10,992,995	\$ 3,855,087	116	77	21
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 8,461,717	\$ 2,264,061	\$ 907,141	51	26	5
Drive-in Restaurants	\$ 5,403,941	\$ 1,768,341	\$ 898,176	29	11	4
Financial Institutions	\$ 8,792,811	\$ 3,088,188	\$ 2,250,282	24	7	4



DOR Code	Value in Low	Value in Medium	Value in High	Bldgs in Low	Bldgs in Medium	Bldgs in High
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 7,346,113	\$ 3,907,467	\$ 520,317	103	73	14
Service Stations	\$ 332,435	\$ 176,235	\$ 91,282	7	3	2
Automotive Repair, Service, a	\$ 3,049,313	\$ 2,051,152	\$ 1,009,317	45	44	14
Parking Lots, Mobile Home Sal	\$ 6,094	\$ 0	\$ 0	2	0	0
Wholesale, Manufacturing, and	\$ 5,882	\$ 42,600	\$ 66,588	1	1	1
Florist, Greenhouses	\$ 133,411	\$ 152,764	\$ 0	3	6	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 588	\$ 0	\$ 0	1	0	0
Night Clubs, Bars, and Cockta	\$ 326,080	\$ 416,689	\$ 0	10	10	0
Bowling Alleys, Skating Rings	\$ 1,471,882	\$ 0	\$ 460,694	2	0	1
Tourist Attractions	\$ 126,823	\$ 16,094	\$ 0	2	2	0
Camps	\$ 315,096	\$ 540,964	\$ 76,141	8	16	3
Race Horse, Auto, and Dog Tra	\$ 63,952	\$ 0	\$ 0	2	0	0
Golf Courses	\$ 119,058	\$ 9,596,840	\$ 632,941	1	23	3
Hotels, Motels	\$ 6,107,635	\$ 271,058	\$ 0	31	4	0
Vacant Industrial	\$ 11,176	\$ 176,588	\$ 0	5	6	0
Light Manufacturing	\$ 3,187,314	\$ 8,261,575	\$ 1,844,310	35	32	11
Heavy Manufacturing	\$ 256,847	\$ 10,152,353	\$ 0	1	33	0
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	\$ 0	0	7	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 125,764	\$ 30,787	\$ 0	1	1	0
Mineral Processing	\$ 419,670	\$ 691,882	\$ 0	16	1	0
Warehouses, And Distribution	\$ 6,522,246	\$ 6,383,583	\$ 1,513,294	122	111	32
Industrial Storage (Fuel, Equ	\$ 29,349	\$ 800,270	\$ 42,235	2	16	2

DOR Code	Value in Low	Value in Medium	Value in High	Bldgs in Low	Bldgs in Medium	Bldgs in High
Improved Agriculture	\$ 69,679,896	\$ 48,619,136	\$ 7,484,196	916	640	94
Cropland Soil Class 1	\$ 73,438,152	\$ 110,792,360	\$ 14,836,148	1,192	1,132	149
Cropland Soil Class 2	\$ 114,437	\$ 59,137	\$ 112,164	5	3	3
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 78,345	\$ 42,292	\$ 56,905	3	6	2
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 807,329	\$ 1,235	\$ 0	17	1	0
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 24,626,192	\$ 23,908,000	\$ 6,303,475	139	118	20
Private Schools	\$ 1,790,685	\$ 1,595,823	\$ 492,741	16	9	6
Private Hospitals	\$ 3,045,058	\$ 0	\$ 11,722,353	1	0	2
Homes for Aged	\$ 6,002,482	\$ 335,894	\$ 0	4	2	0

DOR Code	Value in Low	Value in Medium	Value in High	Bldgs in Low	Bldgs in Medium	Bldgs in High
Orphanages	\$ 31,529	\$ 0	\$ 0	1	0	0
Mortuaries, Cemeteries	\$ 979,223	\$ 601,647	\$ 0	6	4	0
Clubs, Lodges, and Union Hall	\$ 1,925,663	\$ 1,114,221	\$ 119,162	24	16	3
Sanitariums, Convalescent, an	\$ 438,976	\$ 0	\$ 0	6	0	0
Cultural Organizations	\$ 4,310,070	\$ 137,941	\$ 0	8	2	0
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 673,223	\$ 0	0	2	0
Forest, Park, and Recreationa	\$ 32,270	\$ 144,082	\$ 47,035	1	4	2
Public Schools	\$ 23,858,494	\$ 0	\$ 0	23	0	0
Colleges	\$ 176,470	\$ 0	\$ 0	1	0	0
Public Hospitals	\$ 16,738,588	\$ 0	\$ 2,012,741	7	0	4
Other Co×nties	\$ 59,717,740	\$ 2,430,588	\$ 197,611	75	16	1
Other State	\$ 391,764	\$ 1,600	\$ 5,411	3	2	2
Other Federal	\$ 92,181,480	\$ 98,070	\$ 0	8	1	0
Other Municipal	\$ 1,128,460	\$ 1,019,917	\$ 94,882	14	3	2
Gov. Owned Leased by Non-Gov.	\$ 52,535	\$ 0	\$ 0	1	0	0
Utilities	\$ 3,921,285	\$ 5,110,858	\$ 654,103	33	37	7
Mining, Petroleum, and Gas La	\$ 10,129	\$ 0	\$ 0	1	0	0
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights-of-Way Streets, Roads,	\$ 1,176	\$ 2,941	\$ 0	1	3	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 6,588	\$ 91,882	\$ 10,541	2	5	1

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in Wildfire Potential for SANTA\_ROSA County

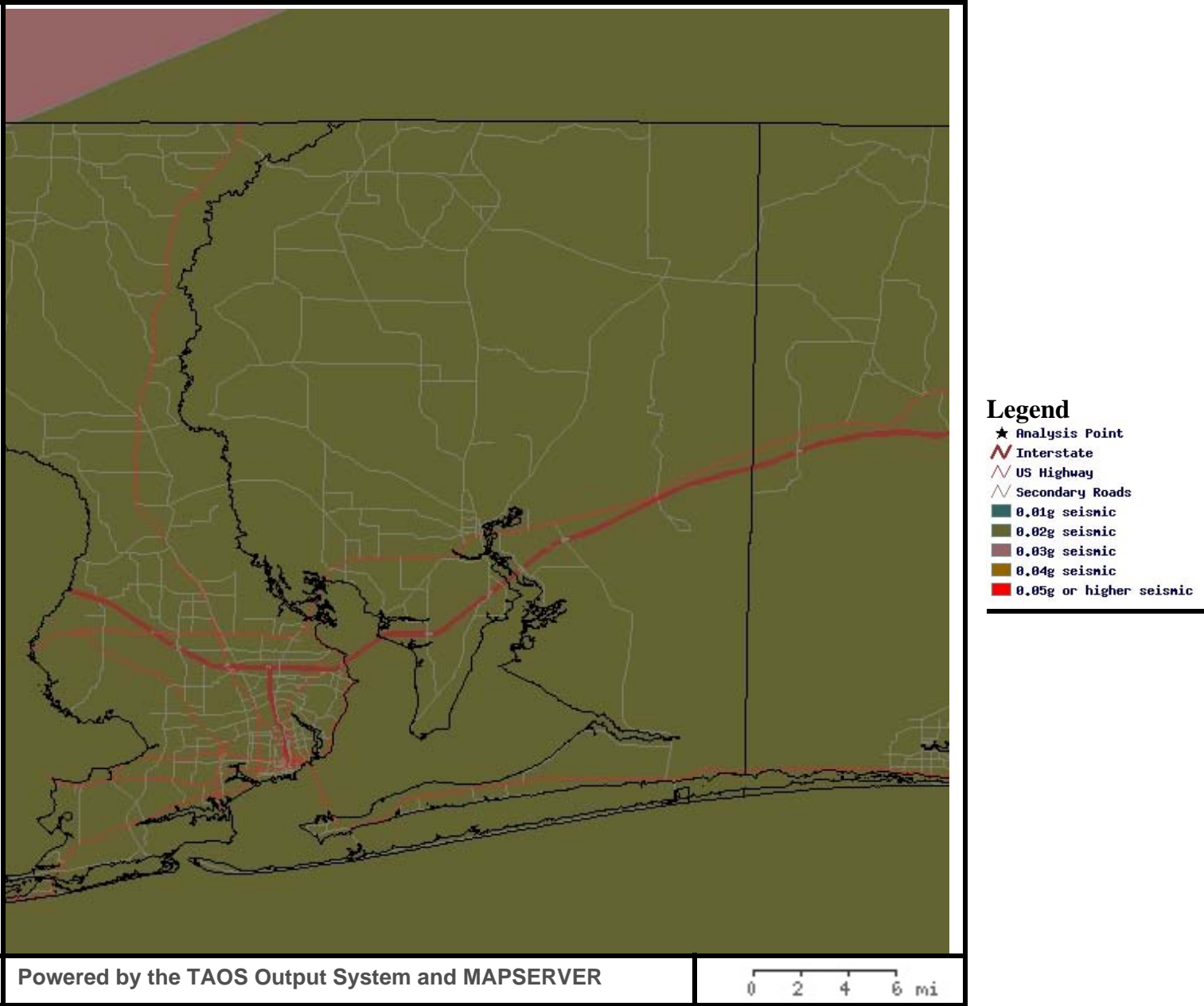
Total Populene in each zone

	Low	Medium	High
TOTAL:	43,665	48,865	25,213

Population in each zone by vulnerability class

DOR Code	Low	Medium	High
Total Population	43,665	48,865	25,213
Minority	3,021	5,427	2,473
Elderly (65+)	5,320	4,739	2,913
Disabled	16,547	15,827	7,447
Below Poverty	4,424	4,911	1,947
Single-Parent	1,415	1,692	719

**Note:**  
Population estimates from Census 2000.  
See documentation for details.



Based on USGS 50 year 10% probability data sets.

Structures in USGS 50yr Gnd Motion for SANTA\_ROSA County

	Value in 0.02g (Very Low)	Bldgs in 0.02g (Very Low)
Total:	\$ 3,933,284,608	50,221

Value of structures in each zone by DOR Use Code

DOR Code	Value in 0.02g (Very Low)	Bldgs in 0.02g (Very Low)
Single Family	\$ 2,722,803,200	34,203
Mobile Homes	\$ 116,452,256	7,018
Multi-family	\$ 20,616,586	127
Condominia	\$ 127,886,744	911
Cooperatives	\$ 165,141	2
Retirement Homes	\$ 31,223	1
Boarding Homes (Institutional)	\$ 0	0
Multi-family less than 10 un	\$ 55,486,496	761
Undefined reserved for DOR	\$ 0	0
Vacant Commercial	\$ 232,001	41
Stores One-Story	\$ 42,657,024	485
Mixed Use, i.e., Store and Of	\$ 7,584,179	100
Department Stores	\$ 0	0
Supermarket	\$ 5,461,365	11
Regional Shopping Malls	\$ 0	0
Community Shopping Centers	\$ 38,453,140	205
One-Story Non-Professional Of	\$ 20,079,492	290
Multi-Story Non-Professional	\$ 4,019,059	7
Professional Service Building	\$ 31,008,126	214
Airports, Marinas, Bus Termin	\$ 0	0
Restaurants, Cafeterias	\$ 11,632,920	82
Drive-in Restaurants	\$ 8,070,460	44
Financial Institutions	\$ 14,131,282	35

DOR Code	Value in 0.02g (Very Low)	Bldgs in 0.02g (Very Low)
Insurance Company Offices	\$ 0	0
Repair Service Shops	\$ 11,773,898	190
Service Stations	\$ 599,952	12
Automotive Repair, Service, a	\$ 6,109,780	103
Parking Lots, Mobile Home Sal	\$ 6,094	2
Wholesale, Manufacturing, and	\$ 115,070	3
Florist, Greenhouses	\$ 286,176	9
Drive-in Theaters, Open Stadi	\$ 0	0
Enclosed Theaters, Auditorium	\$ 588	1
Night Clubs, Bars, and Cockta	\$ 742,769	20
Bowling Alleys, Skating Rings	\$ 1,932,576	3
Tourist Attractions	\$ 142,917	4
Camps	\$ 932,202	27
Race Horse, Auto, and Dog Tra	\$ 63,952	2
Golf Courses	\$ 10,348,840	27
Hotels, Motels	\$ 6,378,694	35
Vacant Industrial	\$ 187,764	11
Light Manufacturing	\$ 13,293,201	78
Heavy Manufacturing	\$ 10,409,200	34
Lumber Yards, Sawmills, Plann	\$ 162,705	7
Fruit, Vegetables, and Meat P	\$ 0	0
Canneries, Distilleries, and	\$ 0	0
Other FoÑd Processing	\$ 156,551	2
Mineral Processing	\$ 1,111,553	17
WarehousÇs, and Distribution	\$ 14,419,120	265
Industrial Storage (Fuel, Equ	\$ 871,855	20

DOR Code	Value in 0.02g (Very Low)	Bldgs in 0.02g (Very Low)
Improved Agriculture	\$ 125,783,312	1,650
Cropland Soil Class 1	\$ 199,066,816	2,473
Cropland, Soil Class 2	\$ 285,740	11
Cropland Soil Class 3	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Grazing Land Soil Class 1	\$ 0	0
Grazing Land Soil Class 2	\$ 0	0
Grazing Land Soil Class 3	\$ 0	0
Grazing Land Soil Class 4	\$ 0	0
Grazing Land Soil Class 5	\$ 0	0
Grazing Land Soil Class 6	\$ 0	0
Orchard, Groves, Citrus	\$ 0	0
Poultry, Bees, Tropical Fish,	\$ 177,544	11
Dairies, Feed Lots	\$ 0	0
Ornamentals, Misc. Agricultur	\$ 808,564	18
Vacant Institutional	\$ 0	0
Churches	\$ 54,837,652	277
Private Schools	\$ 3,879,250	31
Private Hospitals	\$ 14,767,412	3
Homes for Aged	\$ 6,338,376	6



DOR Code	Value in 0.02g (Very Low)	Bldgs in 0.02g (Very Low)
Orphanages	\$ 31,529	1
Mortuaries, Cemeteries	\$ 1,580,870	10
Clubs, Lodges, and Union Hall	\$ 3,159,047	43
Sanitariums, Convalescent, an	\$ 438,976	6
Cultural Organizations	\$ 4,448,012	10
Undefined	\$ 0	0
Military	\$ 673,223	2
Forest, Park, and Recreationa	\$ 223,388	7
Public Schools	\$ 23,858,494	23
Colleges	\$ 176,470	1
Public Hospitals	\$ 18,751,330	11
Other Counties	\$ 62,345,944	92
Other State	\$ 398,776	7
Other Federal	\$ 92,279,552	9
Other Municipal	\$ 2,243,260	19
Gov. Owned Leased by Non-Gov.	\$ 52,535	1
Utilities	\$ 9,686,245	77
Mining, Petroleum, and Gas La	\$ 10,129	1
Subsurface Rights	\$ 0	0
Rights-of-Way Streets, Roads,	\$ 4,117	4
Rivers, Lakes, and Submerged	\$ 0	0
Sewage Disposal, Borrow Pits,	\$ 0	0
Outdoor Recreational	\$ 0	0
Centrally Assessed	\$ 0	0
Acreage not Zoned for Agricul	\$ 109,011	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in USGS 50yr Gnd Motion for SANTA\_ROSA County

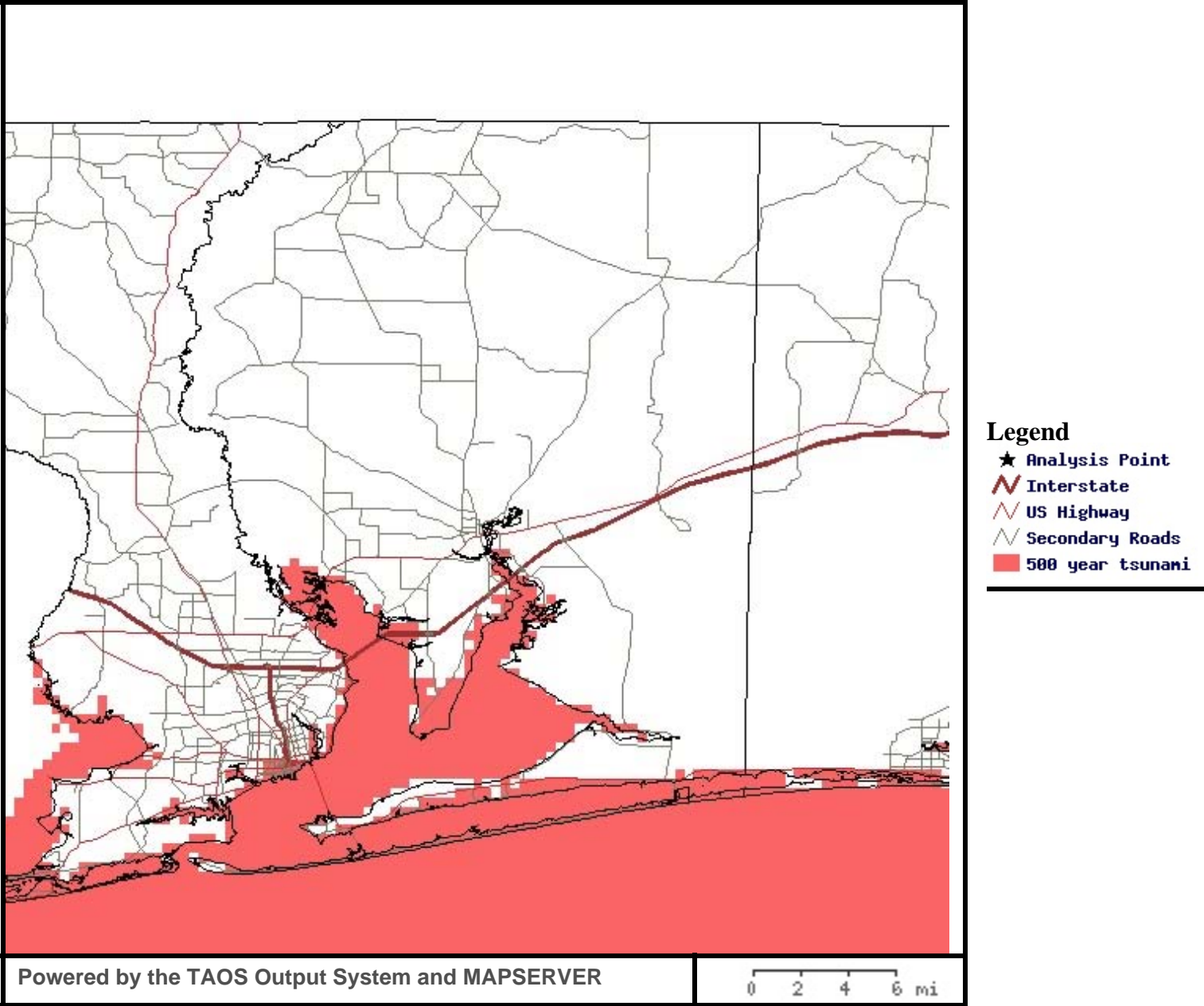
Total Population in each zone

	0.02g (Very Low)
TOTAL:	117,743

Population in each zone by vulnerability class

DOR Code	0.02g (Very Low)
Total Population	117,743
Minority	10,921
Elderly (65+)	12,972
Disabled	39,821
Below Poverty	11,282
Single-Parent	3,826

**Note:**  
Population estimates from Census 2000.  
See documentation for details.



Tsunami assessment based on KAC analysis and simulations.

Structures in 500+ Year Tsunami Zone for SANTA\_ROSA County

	Value in Out of zone	Value in 1 in 500	Bldgs in Out of zone	Bldgs in 1 in 500
Total:	\$ 3,014,443,776	\$ 918,790,528	41,008	9,213

Value of structures in each zone by DOR Use Code

DOR Code	Value in Out of zone	Value in 1 in 500	Bldgs in Out of zone	Bldgs in 1 in 500
Single Family	\$ 2,033,074,176	\$ 689,717,312	27,163	7,040
Mobile Homes	\$ 105,701,296	\$ 10,750,720	6,302	716
Multi-family	\$ 19,329,270	\$ 1,287,317	118	9
Condominia	\$ 18,040,132	\$ 109,846,760	219	692
Cooperatives	\$ 165,141	\$ 0	2	0
Retirement Homes	\$ 0	\$ 31,223	0	1
Boarding Homes (Institutional	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 48,516,124	\$ 6,970,386	663	98
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 118,162	\$ 113,838	33	8
Stores One-Story	\$ 30,422,202	\$ 12,234,823	411	74
Mixe/E Use, i.e., Store and Of	\$ 3,055,724	\$ 4,528,455	57	43
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 5,461,365	\$ 0	11	0
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 29,037,578	\$ 9,415,567	129	76
One-Story Non-Professional Of	\$ 18,116,660	\$ 1,962,829	254	36
Multi-Story Non-Professional	\$ 3,633,047	\$ 386,011	4	3
Professional Service Building	\$ 23,610,702	\$ 7,397,422	164	50
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 5,518,907	\$ 6,114,012	46	36
Drive-in Restaurants	\$ 6,896,694	\$ 1,173,764	39	5
Financial Institutions	\$ 10,742,223	\$ 3,389,058	25	10

DOR Code	Value in Out of zone	Value in 1 in 500	Bldgs in Out of zone	Bldgs in 1 in 500
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 6,465,578	\$ 5,308,318	154	36
Service Stations	\$ 398,117	\$ 201,835	8	4
Automotive Repair, Service, a	\$ 5,696,979	\$ 412,801	92	11
Parking Lots, Mobile Home Sal	\$ 6,094	\$ 0	2	0
Wholesale, Manufacturing, and	\$ 115,070	\$ 0	3	0
Florist, Greenhouses	\$ 286,176	\$ 0	9	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 588	\$ 0	1	0
Night Clubs, Bars, and Cockta	\$ 699,887	\$ 42,882	19	1
Bowling Alleys, Skating Rings	\$ 460,694	\$ 1,471,882	1	2
Tourist Attractions	\$ 138,447	\$ 4,470	3	1
Camps	\$ 932,202	\$ 0	27	0
Race Horse, Auto, and Dog Tra	\$ 63,952	\$ 0	2	0
Golf Courses	\$ 7,637,075	\$ 2,711,764	22	5
Hotels, Motels	\$ 6,378,694	\$ 0	35	0
Vacant Industrial	\$ 180,941	\$ 6,823	9	2
Light Manufacturing	\$ 12,180,684	\$ 1,112,517	70	8
Heavy Manufacturing	\$ 10,409,200	\$ 0	34	0
Lumber Yards, Sawmills, Plann	\$ 162,705	\$ 0	7	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other FoNd Processing	\$ 156,551	\$ 0	2	0
Mineral Processing	\$ 1,111,553	\$ 0	17	0
WarehousCs, and Distribution	\$ 12,568,243	\$ 1,850,878	225	40
Industrial Storage (Fuel, Equ	\$ 769,855	\$ 101,999	16	4

DOR Code	Value in Out of zone	Value in 1 in 500	Bldgs in Out of zone	Bldgs in 1 in 500
Improved Agriculture	\$ 123,593,544	\$ 2,189,762	1,630	20
Cropland Soil Class 1	\$ 196,951,440	\$ 2,115,403	2,426	47
Cropland Soil Class 2	\$ 275,058	\$ 10,681	10	1
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 135,251	\$ 42,292	5	6
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 808,564	\$ 0	18	0
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 48,754,052	\$ 6,083,603	252	25
Private Schools	\$ 3,386,509	\$ 492,741	25	6
Private Hospitals	\$ 14,767,412	\$ 0	3	0
Homes for Aged	\$ 6,338,376	\$ 0	6	0

DOR Code	Value in Out of zone	Value in 1 in 500	Bldgs in Out of zone	Bldgs in 1 in 500
Orphanages	\$ 31,529	\$ 0	1	0
Mortuaries, Cemeteries	\$ 1,262,517	\$ 318,352	8	2
Clubs, Lodges, and Union Hall	\$ 2,215,741	\$ 943,305	35	8
Sanitariums, Convalescent, an	\$ 0	\$ 438,976	0	6
Cultural Organizations	\$ 4,448,012	\$ 0	10	0
Undefined	\$ 0	\$ 0	0	0
Military	\$ 673,223	\$ 0	2	0
Forest, Park, and Recreationa	\$ 188,117	\$ 35,270	6	1
Public Schools	\$ 23,858,494	\$ 0	23	0
Colleges	\$ 176,470	\$ 0	1	0
Public Hospitals	\$ 18,751,330	\$ 0	11	0
Other Counties	\$ 35,327,580	\$ 27,018,362	26	66
Other State	\$ 392,188	\$ 6,588	4	3
Other Federal	\$ 92,161,880	\$ 117,670	8	1
Other Municipal	\$ 2,180,907	\$ 62,352	17	2
Gov. Owned Leased by Non-Gov.	\$ 52,535	\$ 0	1	0
Utilities	\$ 9,317,916	\$ 368,329	70	7
Mining, Petroleum, and Gas La	\$ 10,129	\$ 0	1	0
Subsurface Rights	\$ 0	\$ 0	0	0
Rights-of-Way Streets, Roads,	\$ 2,941	\$ 1,176	3	1
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 109,011	\$ 0	8	0

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in 500+ Year Tsunami Zone for SANTA\_ROSA County

Total Population in each zone

	Out of zone	1 in 500
TOTAL:	97,191	20,552

Population in each zone by vulnerability class

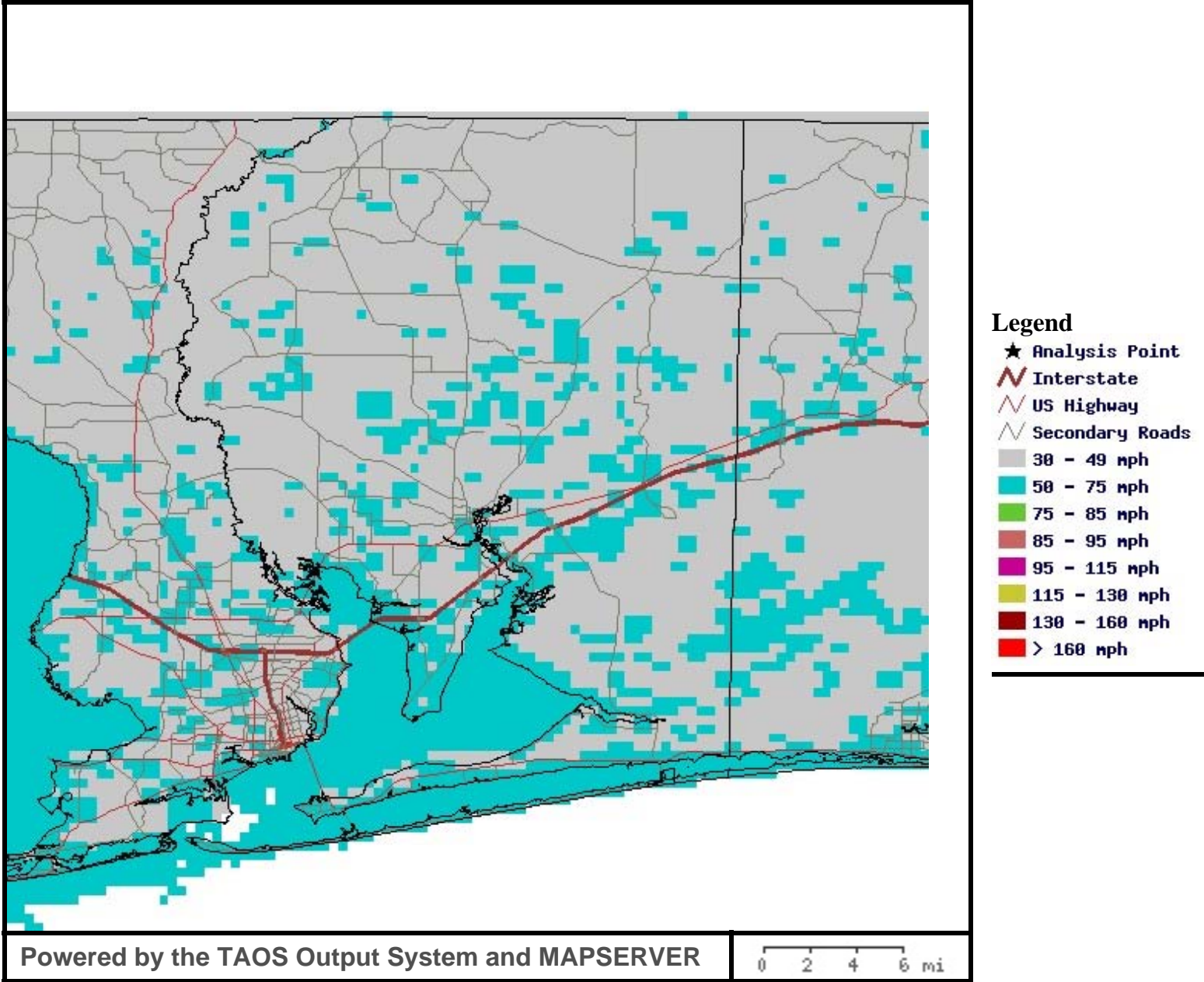
DOR Code	Out of zone	1 in 500
Total Population	97,191	20,552
Minority	9,911	1,010
Elderly (65+)	9,726	3,246
Disabled	34,132	5,689
Below Poverty	10,008	1,274
Single-Parent	3,254	572

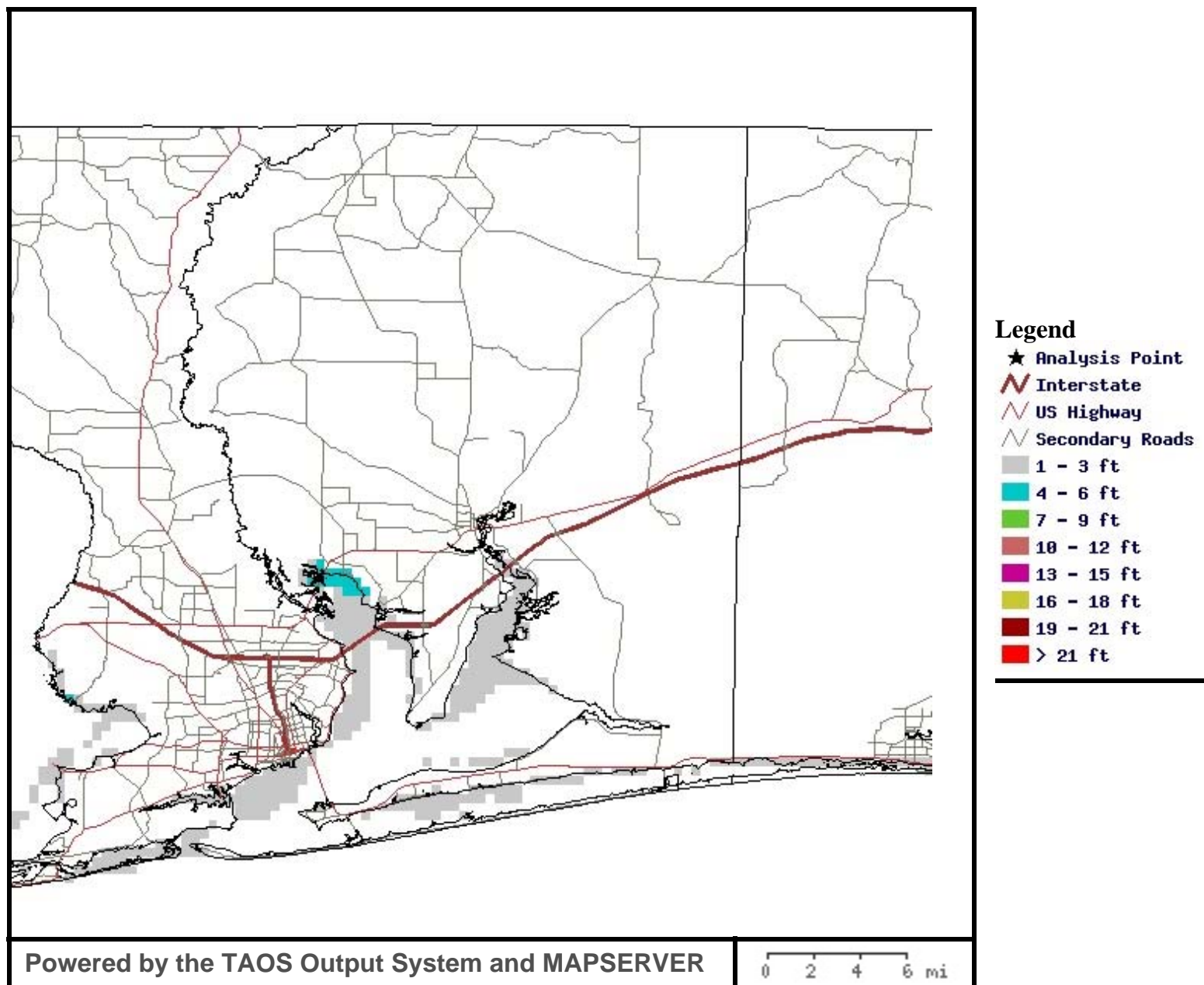
**Note:**  
Population estimates from Census 2000.  
See documentation for details.



**Return Period Based Analysis**

TAOS Based Wind and Flood Risk  
FEMA FIRMS





Based on TAOS composite model simulations.

**Structures in TAOS 10 Year Wind Zone for SANTA\_ROSA County**

	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Total:	\$ 1,079,226,112	\$ 2,854,005,248	11,705	38,516

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Single Family	\$ 783,499,584	\$ 1,939,290,496	8,592	25,611
Mobile Homes	\$ 21,889,312	\$ 94,562,864	1,417	5,601
Multi-family	\$ 2,161,341	\$ 18,455,246	23	104
Condominia	\$ 106,168,200	\$ 21,718,710	650	261
Cooperatives	\$ 0	\$ 165,141	0	2
Retirement Homes	\$ 31,223	\$ 0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 13,255,192	\$ 42,231,340	169	592
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 26,224	\$ 205,776	8	33
Stores One--Story	\$ 14,253,651	\$ 28,403,374	88	397
Mixed Use, i.e., Store aDd Of	\$ 4,754,646	\$ 2,829,532	48	52
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 0	\$ 5,461,365	0	11
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 12,425,129	\$ 26,028,010	77	128
One--Story Non--Professional Of	\$ 3,951,505	\$ 16,127,979	48	242
Multi--Story Non--Professional	\$ 3,526,247	\$ 492,811	4	3
Professional Service Building	\$ 8,247,235	\$ 22,760,890	49	165
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 6,638,023	\$ 4,994,896	40	42
Drive-in Restaurants	\$ 2,826,411	\$ 5,244,047	16	28
Financial Institutions	\$ 2,921,553	\$ 11,209,729	8	27

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 2,616,811	\$ 9,157,084	34	156
Service Stations	\$ 112,047	\$ 487,905	3	9
Automotive Repair, Service, a	\$ 1,285,494	\$ 4,824,287	24	79
Parking Lots, Mobile Home Sal	\$ 0	\$ 6,094	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 115,070	0	3
Florist, Greenhouses	\$ 49,929	\$ 236,247	4	5
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	0	1
Night Clubs, Bars, and Cockta	\$ 63,341	\$ 679,428	1	19
Bowling Alleys, Skating Rings	\$ 657,294	\$ 1,275,282	1	2
Tourist Attractions	\$ 4,470	\$ 138,447	1	3
Camps	\$ 306,482	\$ 625,720	7	20
Race Horse, Auto, and Dog Tra	\$ 0	\$ 63,952	0	2
Golf Courses	\$ 3,344,706	\$ 7,004,134	8	19
Hotels, Motels	\$ 1,711,529	\$ 4,667,165	2	33
Vacant Industrial	\$ 30,941	\$ 156,823	4	7
Light Manufacturing	\$ 1,249,544	\$ 12,043,656	10	68
Heavy Manufacturing	\$ 1,258,588	\$ 9,150,612	1	33
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other Food ProcessinÉ	\$ 0	\$ 156,551	0	2
Mineral Processing	\$ 0	\$ 1,111,553	0	17
Warehouses, and DistribuÖion	\$ 1,055,890	\$ 13,363,231	22	243
Industrial Storage (Fuel, Equ	\$ 0	\$ 871,855	0	20

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Improved Agriculture	\$ 7,622,979	\$ 118,160,312	72	1,578
Cropland Soil Class 1	\$ 11,345,872	\$ 187,720,960	105	2,368
Cropland Soil Class 2	\$ 41,456	\$ 244,283	1	10
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 177,544	0	11
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 808,564	0	18
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 13,476,820	\$ 41,360,832	39	238
Private Schools	\$ 327,400	\$ 3,551,850	6	25
Private Hospitals	\$ 3,045,058	\$ 11,722,353	1	2
Homes for Aged	\$ 3,794,588	\$ 2,543,788	2	4

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Orphanages	\$ 0	\$ 31,529	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 1,262,517	2	8
Clubs, Lodges, and Union Hall	\$ 1,043,814	\$ 2,115,233	11	32
Sanitariums, Convalescent, an	\$ 438,976	\$ 0	6	0
Cultural Organizations	\$ 3,671,764	\$ 776,247	4	6
Undefined	\$ 0	\$ 0	0	0
Military	\$ 673,223	\$ 0	2	0
Forest, Park, and Recreationa	\$ 49,576	\$ 173,811	2	5
Public Schools	\$ 0	\$ 23,858,494	0	23
Colleges	\$ 0	\$ 176,470	0	1
Public Hospitals	\$ 0	\$ 18,751,330	0	11
Other Counties	\$ 30,018,952	\$ 32,326,990	67	25
Other State	\$ 5,411	\$ 393,364	2	5
Other Federal	\$ 482,705	\$ 91,796,848	1	8
Other Municipal	\$ 133,058	\$ 2,110,201	3	16
Gov. Owned Leased by Non-Gov.	\$ 0	\$ 52,535	0	1
Utilities	\$ 2,408,169	\$ 7,278,079	16	61
Mining, Petroleum, and Gas La	\$ 0	\$ 10,129	0	1
Subsurface Rights	\$ 0	\$ 0	0	0
Rights-of-Way Streets, Roads,	\$ 1,176	\$ 2,941	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 4,823	\$ 104,188	2	6

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS 10 Year Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Light Damage (< 10%)	No Damage
TOTAL:	23,170	94,573

Population in each zone by vulnerability class

DOR Code	Light Damage (< 10%)	No Damage
Total Population	23,170	94,573
Minority	1,433	9,488
Elderly (65+)	3,226	9,746
Disabled	6,614	33,207
Below Poverty	1,589	9,693
Single-Parent	728	3,098

**Note:**  
Population estimates from Census 2000.  
See documentation for details.



**Structures in TAOS 10 Year Flood Zone for SANTA\_ROSA County**

	Value in Flood	Value in None	Bldgs in Flood	Bldgs in None
Total:	\$ 582,233,408	\$ 3,351,002,880	5,481	44,740

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Flood	Value in None	Bldgs in Flood	Bldgs in None
Single Family	\$ 403,449,504	\$ 2,319,340,544	4,137	30,066
Mobile Homes	\$ 4,965,991	\$ 111,486,128	368	6,650
Multi-family	\$ 536,400	\$ 20,080,188	4	123
Condominia	\$ 94,574,344	\$ 33,312,430	507	404
Cooperatives	\$ 0	\$ 165,141	0	2
Retirement Homes	\$ 0	\$ 31,223	0	1
Boarding Homes (Institutional)	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 3,923,720	\$ 51,562,784	59	702
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 9,427	\$ 222,574	5	36
Stores One-Story	\$ 9,525,094	\$ 33,131,930	43	442
Mixed Use, i e., Store and Of	\$ 4,228,635	\$ 3,355,544	36	64
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 0	\$ 5,461,365	0	11
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 6,771,223	\$ 31,681,920	45	160
One-Story Non-Professional Of	\$ 724,676	\$ 19,354,816	19	271
Multi-Story Non-Professional	\$ 100,129	\$ 3,918,929	2	5
Professional Service Building	\$ 3,548,317	\$ 27,459,810	24	190
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 5,607,659	\$ 6,025,260	25	57
Drive-in Restaurants	\$ 398,705	\$ 7,671,753	2	42
Financial Institutions	\$ 2,721,294	\$ 11,409,988	5	30

DOR Code	Value in Flood	Value in None	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 4,426,765	\$ 7,347,132	22	168
Service Stations	\$ 201,835	\$ 398,117	4	8
Automotive Repair, Service, a	\$ 264,354	\$ 5,845,426	6	97
Parking Lots, Mobile Home Sal	\$ 0	\$ 6,094	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 115,070	0	3
Florist, Greenhouses	\$ 0	\$ 286,176	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	0	1
Night Clubs, Bars, and Cockta	\$ 42,882	\$ 699,887	1	19
Bowling Alleys, Skating Rings	\$ 1,471,882	\$ 460,694	2	1
Tourist Attractions	\$ 4,470	\$ 138,447	1	3
Camps	\$ 0	\$ 932,202	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 63,952	0	2
Golf Courses	\$ 0	\$ 10,348,840	0	27
Hotels, Motels	\$ 0	\$ 6,378,694	0	35
Vacant Industrial	\$ 6,823	\$ 180,941	2	9
Light Manufacturing	\$ 743,282	\$ 12,549,919	5	73
Heavy Manufacturing	\$ 0	\$ 10,409,200	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other Food PÓrocessing	\$ 0	\$ 156,551	0	2
Mineral Processing	\$ 0	\$ 1,111,553	0	17
Warehouses, Ñnd Distribution	\$ 926,890	\$ 13,492,230	21	244
Industrial Storage (Fuel, Equ	\$ 0	\$ 871,855	0	20

DOR Code	Value in Flood	Value in None	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 967,144	\$ 124,816,160	9	1,641
Cropland Soil Class 1	\$ 764,187	\$ 198,302,624	16	2,457
Cropland Soil Class 2	\$ 0	\$ 285,740	0	11
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 42,292	\$ 135,251	6	5
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 808,564	0	18
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 3,617,470	\$ 51,220,180	21	256
Private Schools	\$ 0	\$ 3,879,250	0	31
Private Hospitals	\$ 0	\$ 14,767,412	0	3
Homes for Aged	\$ 0	\$ 6,338,376	0	6

DOR Code	Value in Flood	Value in None	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 31,529	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 1,262,517	2	8
Clubs, Lodges, and Union Hall	\$ 698,600	\$ 2,460,447	7	36
Sanitariums, Convalescent, an	\$ 361,764	\$ 77,211	3	3
Cultural Organizations	\$ 0	\$ 4,448,012	0	10
Undefined	\$ 0	\$ 0	0	0
Military	\$ 0	\$ 673,223	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 191,117	1	6
Public Schools	\$ 0	\$ 23,858,494	0	23
Colleges	\$ 0	\$ 176,470	0	1
Public Hospitals	\$ 0	\$ 18,751,330	0	11
Other CountiCs	\$ 25,782,948	\$ 36,562,992	64	28
Other State	\$ 0	\$ 398,776	0	7
Other Federal	\$ 117,670	\$ 92,161,880	1	8
Other Municipal	\$ 58,823	\$ 2,184,436	1	18
Gov. Owned Leased by Non-Gov.	\$ 0	\$ 52,535	0	1
Utilities	\$ 295,870	\$ 9,390,375	4	73
Mining, Petroleum, and Gas La	\$ 0	\$ 10,129	0	1
Subsurface Rights	\$ 0	\$ 0	0	0
Rights-of-Way Streets, Roads,	\$ 1,176	\$ 2,941	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 109,011	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS 10 Year Flood Zone for SANTA\_ROSA County

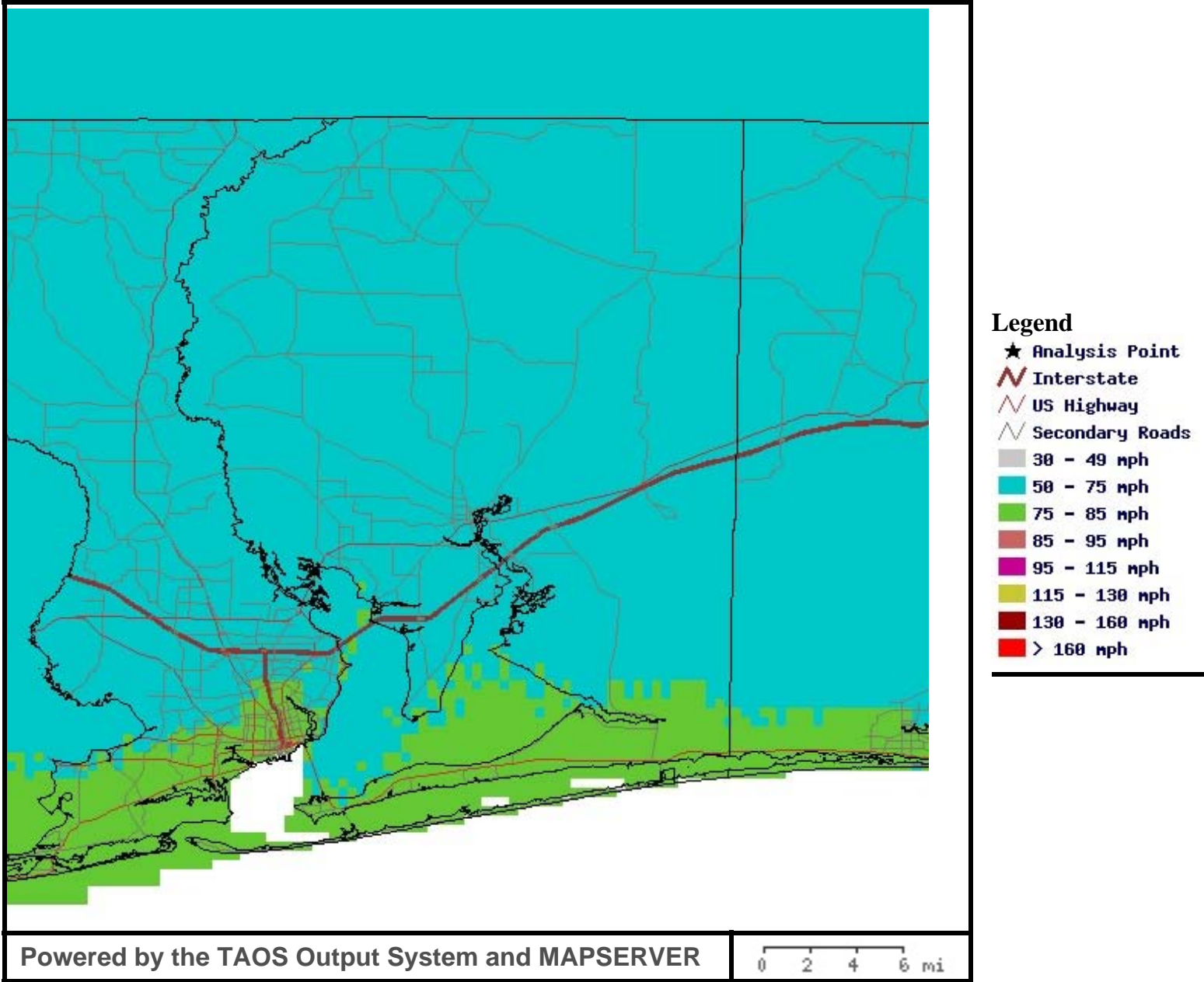
Total Population in each zone

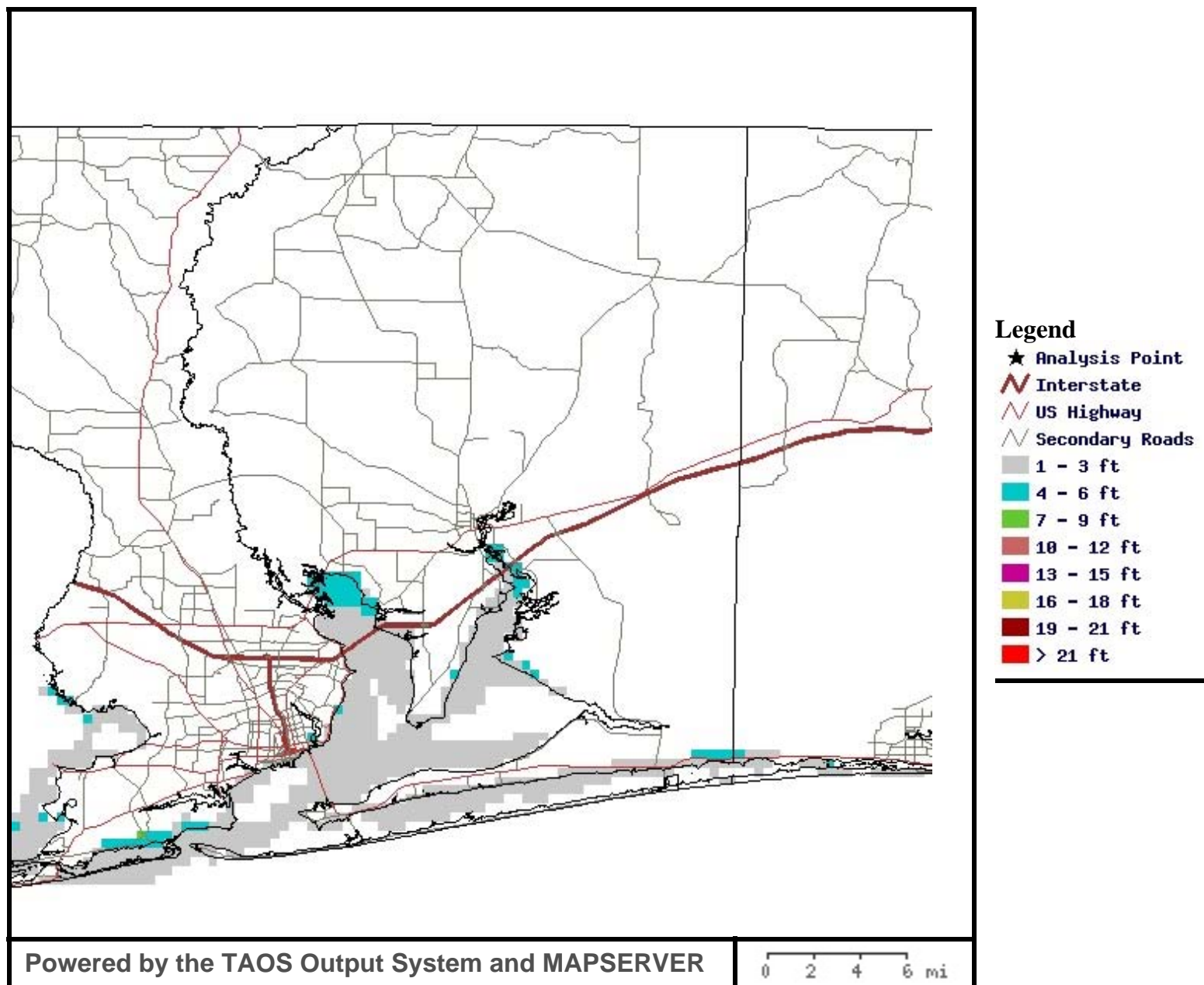
	Flood	None
TOTAL:	7,145	110,598

Population in each zone by vulnerability class

DOR Code	Flood	None
Total Population	7,145	110,598
Minority	279	10,642
Elderly (65+)	1,180	11,792
Disabled	1,914	37,907
Below Poverty	471	10,811
Single-Parent	191	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.





Based on TAOS composite model simulations.

**Structures in TAOS 25 Year Wind Zone for SANTA\_ROSA County**

	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Total:	\$ 3,932,765,440	\$ 519,302	50,209	12

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Single Family	\$ 2,722,749,440	\$ 54,031	34,200	3
Mobile Homes	\$ 116,450,144	\$ 2,117	7,017	1
Multi-family	\$ 20,616,586	\$ 0	127	0
Condominia	\$ 127,886,744	\$ 0	911	0
Cooperatives	\$ 165,141	\$ 0	2	0
Retirement Homes	\$ 31,223	\$ 0	1	0
Boarding Homes (Institutional)	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 55,486,496	\$ 0	761	0
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 232,001	\$ 0	41	0
Stores One-Story	\$ 42,657,024	\$ 0	485	0
Mixed Use, i.e., StoÖe and Of	\$ 7,584,179	\$ 0	100	0
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 5,461,365	\$ 0	11	0
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 38,453,140	\$ 0	205	0
One-Story Non-Professional Of	\$ 20,079,492	\$ 0	290	0
Multi-Story Non-Professional	\$ 4,019,059	\$ 0	7	0
Professional Service Building	\$ 31,008,126	\$ 0	214	0
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 11,632,920	\$ 0	82	0
Drive-in Restaurants	\$ 8,070,460	\$ 0	44	0
Financial Institutions	\$ 14,131,282	\$ 0	35	0



DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 11,773,898	\$ 0	190	0
Service Stations	\$ 599,952	\$ 0	12	0
Automotive Repair, Service, a	\$ 6,109,780	\$ 0	103	0
Parking Lots, Mobile Home Sal	\$ 6,094	\$ 0	2	0
Wholesale, Manufacturing, and	\$ 115,070	\$ 0	3	0
Florist, Greenhouses	\$ 286,176	\$ 0	9	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 588	\$ 0	1	0
Night Clubs, Bars, and Cockta	\$ 742,769	\$ 0	20	0
Bowling Alleys, Skating Rings	\$ 1,932,576	\$ 0	3	0
Tourist Attractions	\$ 142,917	\$ 0	4	0
Camps	\$ 932,202	\$ 0	27	0
Race Horse, Auto, and Dog Tra	\$ 63,952	\$ 0	2	0
Golf Courses	\$ 10,348,840	\$ 0	27	0
Hotels, Motels	\$ 6,378,694	\$ 0	35	0
Vacant Industrial	\$ 187,764	\$ 0	11	0
Light Manufacturing	\$ 13,293,201	\$ 0	78	0
Heavy Manufacturing	\$ 10,409,200	\$ 0	34	0
Lumber Yards, Sawmills, Plann	\$ 162,705	\$ 0	7	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other Food ProcessinÉ	\$ 156,551	\$ 0	2	0
Mineral Processing	\$ 1,111,553	\$ 0	17	0
Warehouses, and DistÖibution	\$ 14,419,120	\$ 0	265	0
Industrial Storage (Fuel, Equ	\$ 871,855	\$ 0	20	0

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Improved Agriculture	\$ 125,783,312	\$ 0	1,650	0
Cropland Soil Class 1	\$ 198,603,680	\$ 463,152	2,465	8
Cropland Soil Class "	\$ 285,740	\$ 0	11	0
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 177,544	\$ 0	11	0
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 808,564	\$ 0	18	0
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 54,837,652	\$ 0	277	0
Private Schools	\$ 3,879,250	\$ 0	31	0
Private Hospitals	\$ 14,767,412	\$ 0	3	0
Homes for Aged	\$ 6,338,376	\$ 0	6	0

DOR Code	Value in Light Damage (less than 10%)	Value in No Damage	Bldgs in Light Damage (less than 10%)	Bldgs in No Damage
Orphanages	\$ 31,529	\$ 0	1	0
Mortuaries, Cemeteries	\$ 1,580,870	\$ 0	10	0
Clubs, Lodges, and Union Hall	\$ 3,159,047	\$ 0	43	0
Sanitariums, Convalescent, an	\$ 438,976	\$ 0	6	0
Cultural Organizations	\$ 4,448,012	\$ 0	10	0
Undefined	\$ 0	\$ 0	0	0
Military	\$ 673,223	\$ 0	2	0
Forest, Park, and Recreationa	\$ 223,388	\$ 0	7	0
Public Schools	\$ 23,858,494	\$ 0	23	0
Colleges	\$ 176,470	\$ 0	1	0
Public Hospitals	\$ 18,751,330	\$ 0	11	0
Other Counties	\$ 62,345,944	\$ 0	92	0
Other State	\$ 398,776	\$ 0	7	0
Other Federal	\$ 92,279,552	\$ 0	9	0
Other Municipal	\$ 2,243,260	\$ 0	19	0
Gov. Owned Leased by Non-Gov.	\$ 52,535	\$ 0	1	0
Utilities	\$ 9,686,245	\$ 0	77	0
Mining, Petroleum, and Gas La	\$ 10,129	\$ 0	1	0
Subsurface Rights	\$ 0	\$ 0	0	0
Rights-of-Way Streets, Roads,	\$ 4,117	\$ 0	4	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 109,011	\$ 0	8	0

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in TAOS 25 Year Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Light Damage (< 10%)
TOTAL:	117,743

Population in each zone by vulnerability class

DOR Code	Light Damage (< 10%)
Total Population	117,743
Minority	10,921
Elderly (65+)	12,972
Disabled	39,821
Below Poverty	11,282
Single-Parent	3,826

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS 25 Year Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 7,181,483	\$ 592,780,928	\$ 3,333,272,832	110	5,657	44,454

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 6,830,871	\$ 412,619,232	\$ 2,303,342,080	88	4,265	29,850
Mobile Homes	\$ 144,816	\$ 5,763,448	\$ 110,543,840	16	404	6,598
Multi-family	\$ 0	\$ 576,917	\$ 20,039,670	0	5	122
Condominia	\$ 0	\$ 94,574,344	\$ 33,312,430	0	507	404
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 0	\$ 31,223	0	0	1
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 43,235	\$ 4,134,781	\$ 51,308,488	1	63	697
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 0	\$ 9,427	\$ 222,574	0	5	36
Stores One--Story	\$ 23,129	\$ 9,501,965	\$ 33,131,930	1	42	442
Mixed Use, i e., Store and Of	\$ 0	\$ 4,281,823	\$ 3,302,355	0	38	62
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 0	\$ 6,771,223	\$ 31,681,920	0	45	160
One--Story Non--Professional Of	\$ 38,964	\$ 744,158	\$ 19,296,368	1	19	270
Multi--Story Non--Professional	\$ 0	\$ 100,129	\$ 3,918,929	0	2	5
Professional Service Building	\$ 0	\$ 3,548,317	\$ 27,459,810	0	24	190
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 0	\$ 5,607,659	\$ 6,025,260	0	25	57
Drive-in Restaurants	\$ 0	\$ 398,705	\$ 7,671,753	0	2	42
Financial Institutions	\$ 0	\$ 2,721,294	\$ 11,409,988	0	5	30

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 0	\$ 4,525,118	\$ 7,248,779	0	23	167
Service Stations	\$ 0	\$ 201,835	\$ 398,117	0	4	8
Automotive Repair, Service, a	\$ 0	\$ 264,354	\$ 5,845,426	0	6	97
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 0	\$ 42,882	\$ 699,887	0	1	19
Bowling Alleys, Skating Rings	\$ 0	\$ 1,471,882	\$ 460,694	0	2	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 0	\$ 0	\$ 10,348,840	0	0	27
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 0	\$ 6,823	\$ 180,941	0	2	9
Light Manufacturing	\$ 0	\$ 743,282	\$ 12,549,919	0	5	73
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
WarehousÇs, and Distribution	\$ 0	\$ 977,607	\$ 13,441,514	0	22	243
Industrial Storage (Fuel, Equ	\$ 0	\$ 0	\$ 871,855	0	0	20

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 0	\$ 967,144	\$ 124,816,160	0	9	1,641
Cropland Soil Class 1	\$ 100,465	\$ 858,344	\$ 198,108,032	3	18	2,452
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	0	0	11
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 42,292	\$ 135,251	0	6	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 808,564	0	0	18
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 0	\$ 3,617,470	\$ 51,220,180	0	21	256
Private Schools	\$ 0	\$ 0	\$ 3,879,250	0	0	31
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 0	\$ 318,352	\$ 1,262,517	0	2	8
Clubs, Lodges, and Union Hall	\$ 0	\$ 733,070	\$ 2,425,976	0	8	35
Sanitariums, Convalescent, an	\$ 0	\$ 361,764	\$ 77,211	0	3	3
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 0	\$ 32,270	\$ 191,117	0	1	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 0	\$ 1,176	\$ 397,600	0	1	6
Other FeÆeral	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 58,823	\$ 2,184,436	0	1	18
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 0	\$ 295,870	\$ 9,390,375	0	4	73
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 0	\$ 1,176	\$ 2,941	0	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 0	\$ 109,011	0	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.



Population in TAOS 25 Year Flood Zone for SANTA\_ROSA County

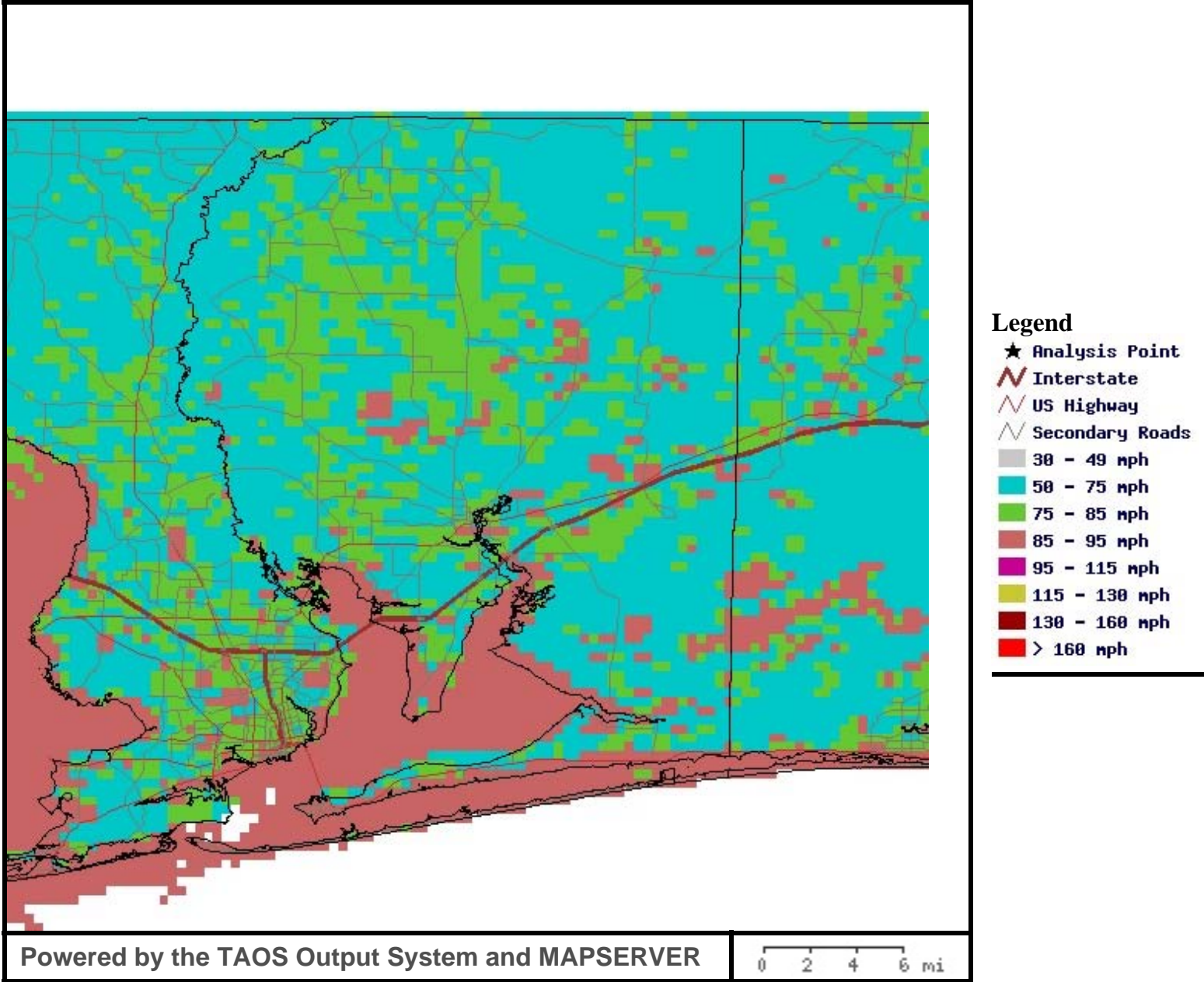
Total Population in each zone

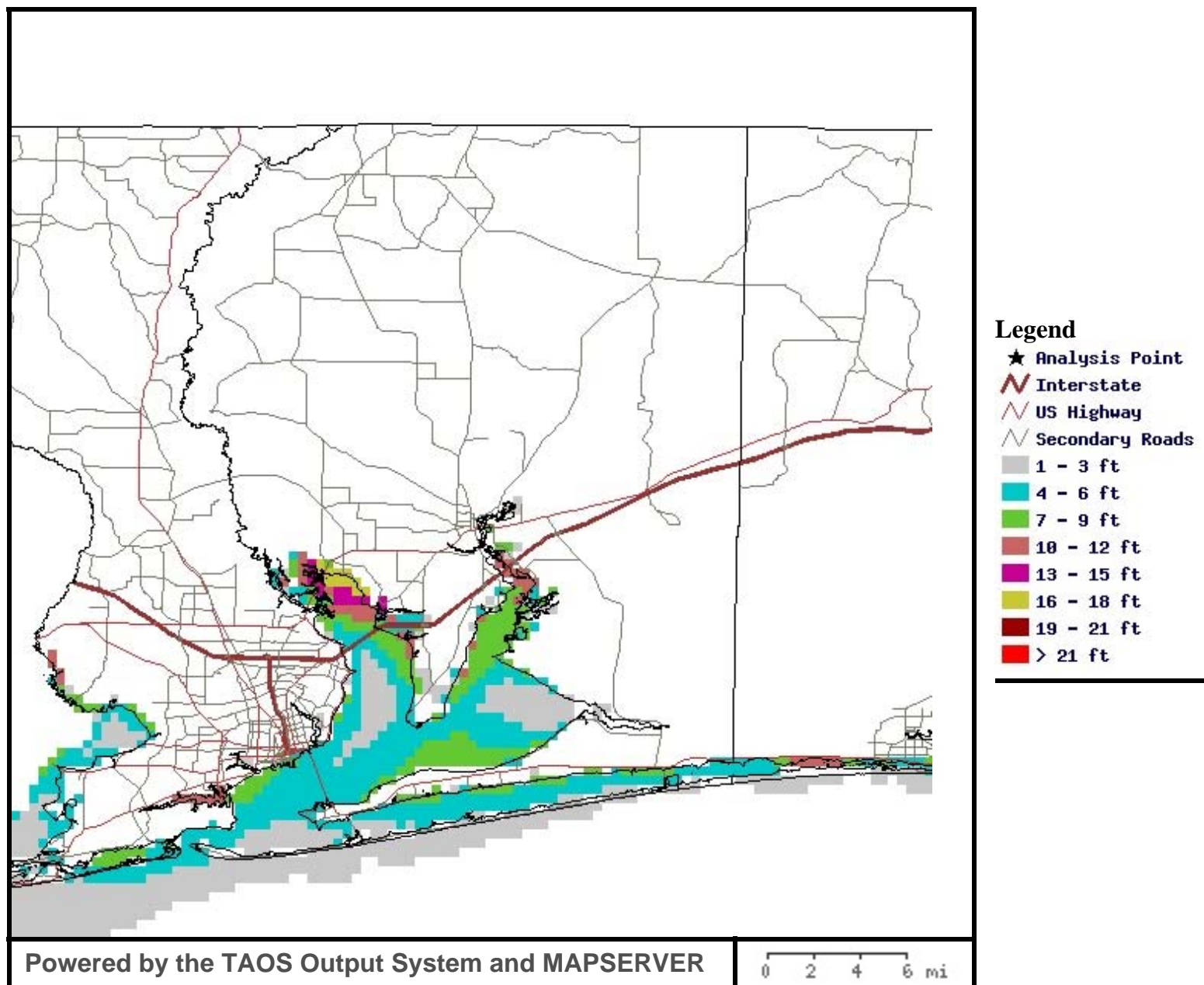
	Wave/Current	Flood	None
TOTAL:	3,315	3,830	110,598

Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	3,315	3,830	110,598
Minority	164	115	10,642
Elderly (65+)	417	763	11,792
Disabled	1,012	902	37,907
Below Poverty	357	114	10,811
Single-Parent	78	113	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.





Based on TAOS composite model simulations.

Structures in TAOS 50 Year Wind Zone for SANTA\_ROSA County

	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Total:	\$ 3,933,284,608	50,221

Value of structures in each zone by DOR Use Code

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Single Family	\$ 2,722,803,200	34,203
Mobile Homes	\$ 116,452,256	7,018
Multi-family	\$ 20,616,586	127
Condominia	\$ 127,886,744	911
Cooperatives	\$ 165,141	2
Retirement Homes	\$ 31,223	1
Boarding Homes (Institutional	\$ 0	0
Multi-family less than 10 un	\$ 55,486,496	761
Undefined reserved for DOR	\$ 0	0
Vacant Commercial	\$ 232,001	41
Stores One-Story	\$ 42,657,024	485
Mixed Use, i.e., StoÔe and Of	\$ 7,584,179	100
Department Stores	\$ 0	0
Supermarket	\$ 5,461,365	11
Regional Shopping Malls	\$ 0	0
Community Shopping Centers	\$ 38,453,140	205
One-Story Non-Professional Of	\$ 20,079,492	290
Multi-Story Non-Professional	\$ 4,019,059	7
Professional Service Building	\$ 31,008,126	214
Airports, Marinas, Bus Termin	\$ 0	0
Restaurants, Cafeterias	\$ 11,632,920	82
Drive-in Restaurants	\$ 8,070,460	44
Financial Institutions	\$ 14,131,282	35

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Insurance Company Offices	\$ 0	0
Repair Service Shops	\$ 11,773,898	190
Service Stations	\$ 599,952	12
Automotive Repair, Service, a	\$ 6,109,780	103
Parking Lots, Mobile Home Sal	\$ 6,094	2
Wholesale, Manufacturing, and	\$ 115,070	3
Florist, Greenhouses	\$ 286,176	9
Drive-in Theaters, Open Stadi	\$ 0	0
Enclosed Theaters, Auditorium	\$ 588	1
Night Clubs, Bars, and Cockta	\$ 742,769	20
Bowling Alleys, Skating Rings	\$ 1,932,576	3
Tourist Attractions	\$ 142,917	4
Camps	\$ 932,202	27
Race Horse, Auto, and Dog Tra	\$ 63,952	2
Golf Courses	\$ 10,348,840	27
Hotels, Motels	\$ 6,378,694	35
Vacant Industrial	\$ 187,764	11
Light Manufacturing	\$ 13,293,201	78
Heavy Manufacturing	\$ 10,409,200	34
Lumber Yards, Sawmills, Plann	\$ 162,705	7
Fruit, Vegetables, and Meat P	\$ 0	0
Canneries, Distilleries, and	\$ 0	0
Other Food ProcessinÉ	\$ 156,551	2
Mineral Processing	\$ 1,111,553	17
Warehouses, and DistÓibution	\$ 14,419,120	265
Industrial Storage (Fuel, Equ	\$ 871,855	20

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Improved Agriculture	\$ 125,783,312	1,650
Cropland Soil Class 1	\$ 199,066,816	2,473
Cropland Soil Class 2	\$ 285,740	11
Cropland Soil Class 3	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Timberland	\$ 0	0
Grazing Land Soil Class 1	\$ 0	0
Grazing Land Soil Class 2	\$ 0	0
Grazing Land Soil Class 3	\$ 0	0
Grazing Land Soil Class 4	\$ 0	0
Grazing Land Soil Class 5	\$ 0	0
Grazing Land Soil Class 6	\$ 0	0
Orchard, Groves, Citrus	\$ 0	0
Poultry, Bees, Tropical Fish,	\$ 177,544	11
Dairies, Feed Lots	\$ 0	0
Ornamentals, Misc. Agricultur	\$ 808,564	18
Vacant Institutional	\$ 0	0
Churches	\$ 54,837,652	277
Private Schools	\$ 3,879,250	31
Private Hospitals	\$ 14,767,412	3
Homes for Aged	\$ 6,338,376	6

DOR Code	Value in Light Damage (less than 10%)	Bldgs in Light Damage (less than 10%)
Orphanages	\$ 31,529	1
Mortuaries, Cemeteries	\$ 1,580,870	10
Clubs, Lodges, and Union Hall	\$ 3,159,047	43
Sanitariums, Convalescent, an	\$ 438,976	6
Cultural Organizations	\$ 4,448,012	10
Undefined	\$ 0	0
Military	\$ 673,223	2
Forest, Park, and Recreationa	\$ 223,388	7
Public Schools	\$ 23,858,494	23
Colleges	\$ 176,470	1
Public Hospitals	\$ 18,751,330	11
Other Counties	\$ 62,345,944	92
Other State	\$ 398,776	7
Other Federal	\$ 92,279,552	9
Other Municipal	\$ 2,243,260	19
Gov. Owned Leased by Non-Gov.	\$ 52,535	1
Utilities	\$ 9,686,245	77
Mining, Petroleum, and Gas La	\$ 10,129	1
Subsurface Rights	\$ 0	0
Rights-of-Way Streets, Roads,	\$ 4,117	4
Rivers, Lakes, and Submerged	\$ 0	0
Sewage Disposal, Borrow Pits,	\$ 0	0
Outdoor Recreational	\$ 0	0
Centrally Assessed	\$ 0	0
Acreage not Zoned for Agricul	\$ 109,011	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS 50 Year Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Light Damage (< 10%)
TOTAL:	117,743

Population in each zone by vulnerability class

DOR Code	Light Damage (< 10%)
Total Population	117,743
Minority	10,921
Elderly (65+)	12,972
Disabled	39,821
Below Poverty	11,282
Single-Parent	3,826

**Note:**  
Population estimates from Census 2000.  
See documentation for details.



**Structures in TAOS 50 Year Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 43,754,592	\$ 583,577,088	\$ 3,305,903,616	592	5,637	43,992

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 39,839,588	\$ 399,305,664	\$ 2,283,647,744	500	4,116	29,587
Mobile Homes	\$ 501,172	\$ 7,272,266	\$ 108,678,624	42	516	6,460
Multi-family	\$ 40,517	\$ 536,400	\$ 20,039,670	1	4	122
Condominia	\$ 433,764	\$ 94,178,112	\$ 33,274,900	8	500	403
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 31,223	\$ 0	0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 244,702	\$ 3,991,844	\$ 51,249,956	7	59	695
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 0	\$ 12,132	\$ 219,868	0	6	35
Stores One--Story	\$ 343,447	\$ 9,673,248	\$ 32,640,330	7	46	432
Mixed Use, i e., Store and Of	\$ 0	\$ 4,322,776	\$ 3,261,402	0	39	61
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 0	\$ 6,771,223	\$ 31,681,920	0	45	160
One--Story Non--Professional Of	\$ 85,047	\$ 750,923	\$ 19,243,522	2	19	269
Multi--Story Non--Professional	\$ 0	\$ 100,129	\$ 3,918,929	0	2	5
Professional Service Building	\$ 181,341	\$ 3,488,788	\$ 27,337,996	1	24	189
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 0	\$ 6,451,188	\$ 5,181,731	0	37	45
Drive-in Restaurants	\$ 0	\$ 398,705	\$ 7,671,753	0	2	42
Financial Institutions	\$ 0	\$ 2,721,294	\$ 11,409,988	0	5	30

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 481,176	\$ 4,240,576	\$ 7,052,143	3	25	162
Service Stations	\$ 0	\$ 201,835	\$ 398,117	0	4	8
Automotive Repair, Service, a	\$ 52,588	\$ 211,765	\$ 5,845,426	1	5	97
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 0	\$ 42,882	\$ 699,887	0	1	19
Bowling Alleys, Skating Rings	\$ 0	\$ 1,471,882	\$ 460,694	0	2	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 0	\$ 2,711,764	\$ 7,637,075	0	5	22
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 0	\$ 6,823	\$ 180,941	0	2	9
Light Manufacturing	\$ 0	\$ 743,282	\$ 12,549,919	0	5	73
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
WarehousÇs, and Distribution	\$ 0	\$ 1,286,136	\$ 13,132,984	0	26	239
Industrial Storage (Fuel, Equ	\$ 0	\$ 0	\$ 871,855	0	0	20

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 72,000	\$ 1,560,921	\$ 124,150,384	1	15	1,634
Cropland Soil Class 1	\$ 351,767	\$ 771,888	\$ 197,943,200	7	20	2,446
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	0	0	11
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 42,292	\$ 135,251	0	6	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 808,564	0	0	18
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 611,772	\$ 3,005,697	\$ 51,220,180	5	16	256
Private Schools	\$ 0	\$ 0	\$ 3,879,250	0	0	31
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 0	\$ 1,262,517	2	0	8
Clubs, Lodges, and Union Hall	\$ 144,494	\$ 650,223	\$ 2,364,329	2	7	34
Sanitariums, Convalescent, an	\$ 0	\$ 361,764	\$ 77,211	0	3	3
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 0	\$ 191,117	1	0	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 0	\$ 6,588	\$ 392,188	0	3	4
Other FeÆeral	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 58,823	\$ 2,184,436	0	1	18
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 20,576	\$ 288,929	\$ 9,376,740	2	3	72
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 0	\$ 1,176	\$ 2,941	0	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 0	\$ 109,011	0	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in TAOS 50 Year Flood Zone for SANTA\_ROSA County

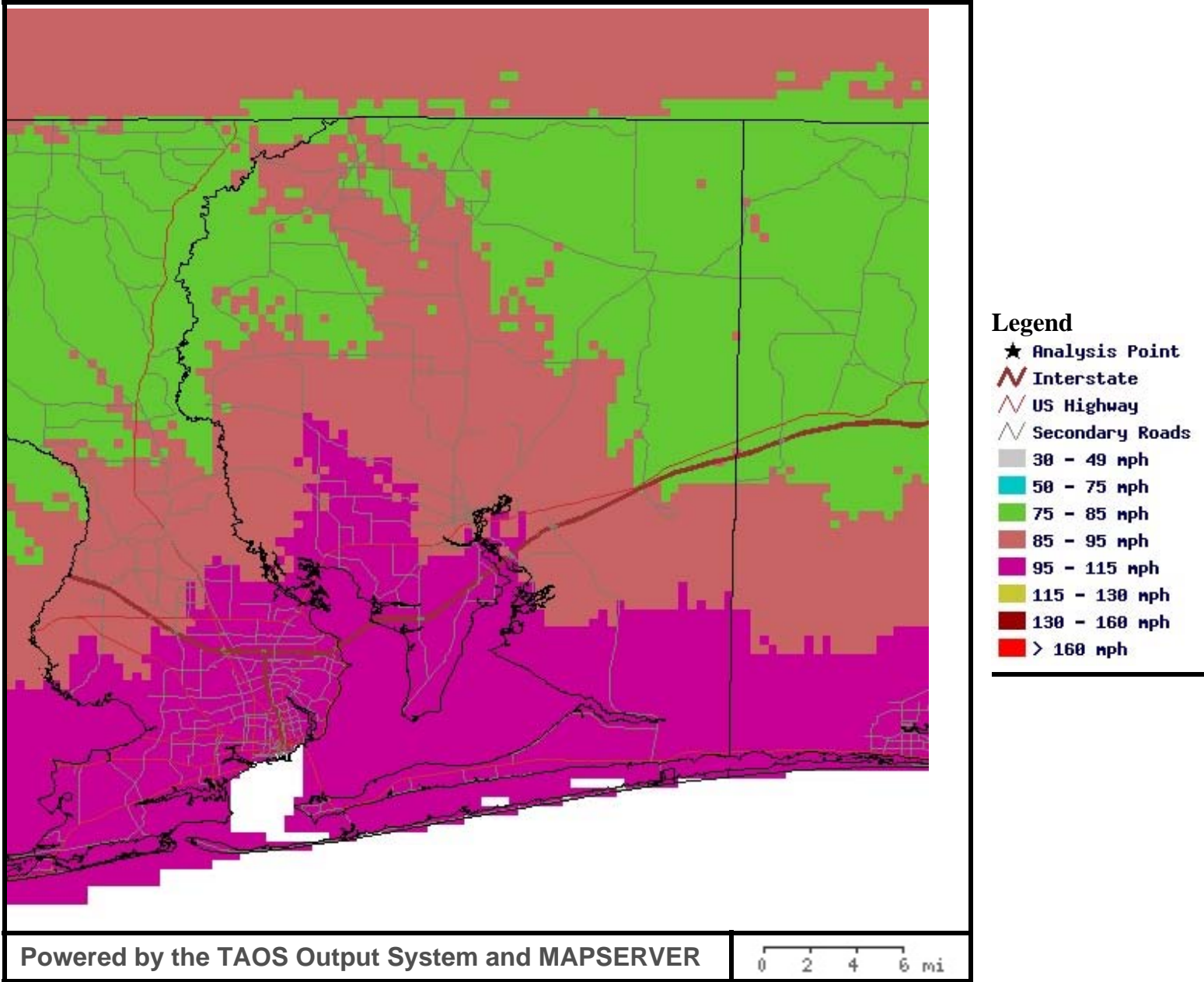
Total Population in each zone

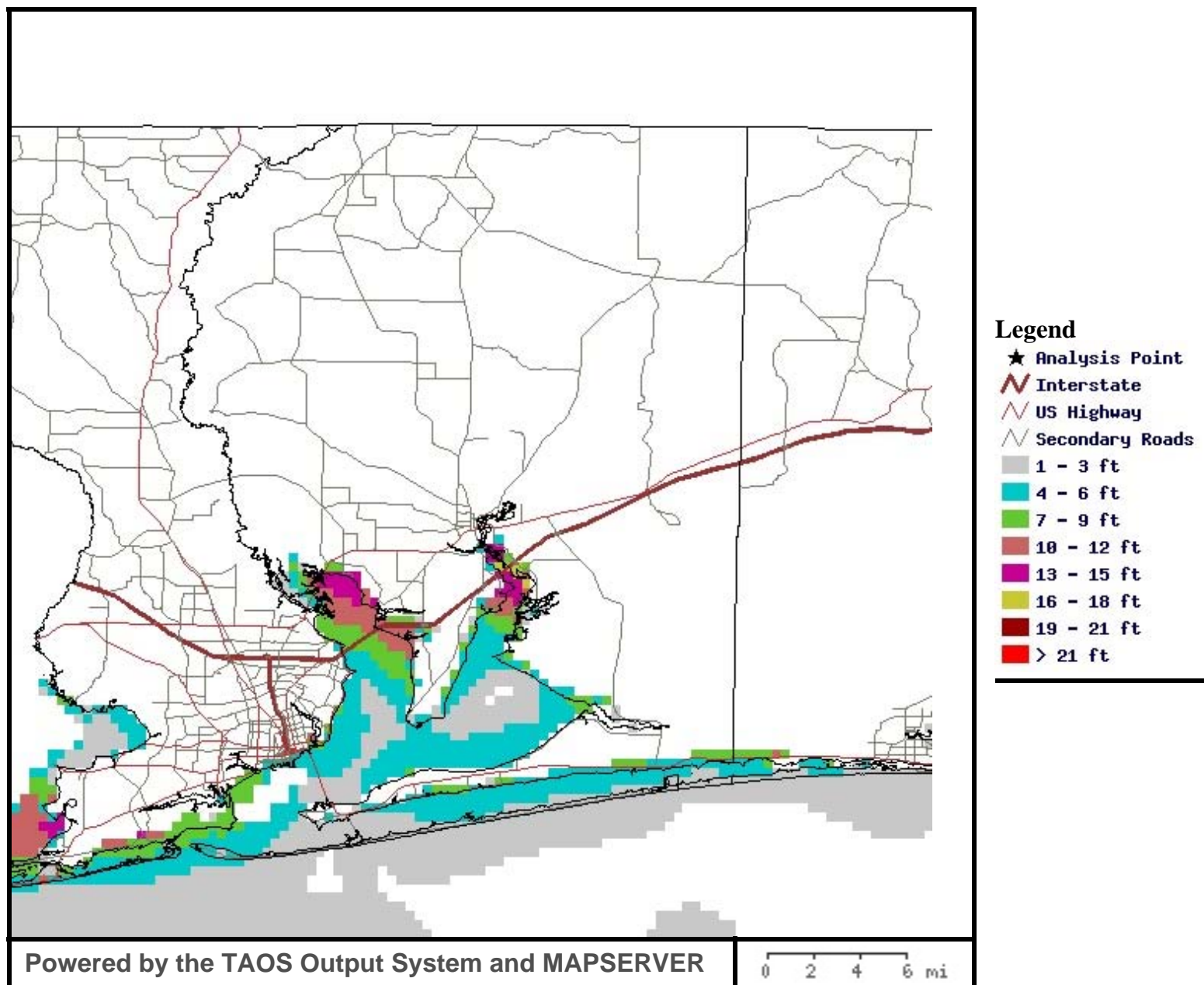
	Wave/Current	Flood	None
TOTAL:	3,315	3,830	110,598

Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	3,315	3,830	110,598
Minority	164	115	10,642
Elderly (65+)	417	763	11,792
Disabled	1,012	902	37,907
Below Poverty	357	114	10,811
Single-Parent	78	113	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.





Based on TAOS composite model simulations.

**Structures in TAOS 100 Year Wind Zone for SANTA\_ROSA County**

	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Total:	\$ 690,340,800	\$ 3,242,898,176	7,388	42,833

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Single Family	\$ 489,279,680	\$ 2,233,519,872	5,460	28,743
Mobile Homes	\$ 13,846,099	\$ 102,606,032	876	6,142
Multi-family	\$ 796,658	\$ 19,819,928	14	113
Condominia	\$ 92,850,216	\$ 35,036,528	497	414
Cooperatives	\$ 0	\$ 165,141	0	2
Retirement Homes	\$ 31,223	\$ 0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	0	0
Multi-family less than 10 un	\$ 5,258,513	\$ 50,228,012	70	691
Undefined reserved for DOR	\$ 0	\$ 0	0	0
Vacant Commercial	\$ 5,038	\$ 226,962	5	36
Stores One--Story	\$ 10,792,009	\$ 31,865,016	40	445
Mixed Use, i.e., StoÔe and Of	\$ 4,301,729	\$ 3,282,450	38	62
Department Stores	\$ 0	\$ 0	0	0
Supermarket	\$ 0	\$ 5,461,365	0	11
Regional Shopping Malls	\$ 0	\$ 0	0	0
Community Shopping Centers	\$ 5,467,553	\$ 32,985,588	37	168
One--Story Non--Professional Of	\$ 2,128,317	\$ 17,951,172	32	258
Multi--Story Non--Professional	\$ 100,129	\$ 3,918,929	2	5
Professional Service Building	\$ 3,261,058	\$ 27,747,066	17	197
Airports, Marinas, Bus Termin	\$ 0	\$ 0	0	0
Restaurants, Cafeterias	\$ 6,175,094	\$ 5,457,825	34	48
Drive-in Restaurants	\$ 1,392,470	\$ 6,677,988	8	36
Financial Institutions	\$ 1,017,058	\$ 13,114,223	2	33



DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Insurance Company Offices	\$ 0	\$ 0	0	0
Repair Service Shops	\$ 1,789,423	\$ 9,984,473	24	166
Service Stations	\$ 6,752	\$ 593,199	1	11
Automotive Repair, Service, a	\$ 511,705	\$ 5,598,074	16	87
Parking Lots, Mobile Home Sal	\$ 0	\$ 6,094	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 115,070	0	3
Florist, Greenhouses	\$ 18,682	\$ 267,494	2	7
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 588	0	1
Night Clubs, Bars, and Cockta	\$ 63,341	\$ 679,428	1	19
Bowling Alleys, Skating Rings	\$ 657,294	\$ 1,275,282	1	2
Tourist Attractions	\$ 4,470	\$ 138,447	1	3
Camps	\$ 213,717	\$ 718,484	5	22
Race Horse, Auto, and Dog Tra	\$ 0	\$ 63,952	0	2
Golf Courses	\$ 2,711,764	\$ 7,637,075	5	22
Hotels, Motels	\$ 1,711,529	\$ 4,667,165	2	33
Vacant Industrial	\$ 30,352	\$ 157,411	3	8
Light Manufacturing	\$ 1,199,122	\$ 12,094,079	10	68
Heavy Manufacturing	\$ 0	\$ 10,409,200	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 162,705	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	0	0
Other Food ProcessinÉ	\$ 0	\$ 156,551	0	2
Mineral Processing	\$ 0	\$ 1,111,553	0	17
Warehouses, and DistÓibution	\$ 884,349	\$ 13,534,770	19	246
Industrial Storage (Fuel, Equ	\$ 0	\$ 871,855	0	20

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Improved Agriculture	\$ 2,540,347	\$ 123,242,944	21	1,629
Cropland Soil Class 1	\$ 3,331,804	\$ 195,735,072	39	2,434
Cropland Soil Class "	\$ 0	\$ 285,740	0	11
Cropland Soil Class 3	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Timberland	\$ 0	\$ 0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 177,544	0	11
Dairies, Feed Lots	\$ 0	\$ 0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 808,564	0	18
Vacant Institutional	\$ 0	\$ 0	0	0
Churches	\$ 3,141,317	\$ 51,696,336	15	262
Private Schools	\$ 71,647	\$ 3,807,603	1	30
Private Hospitals	\$ 3,045,058	\$ 11,722,353	1	2
Homes for Aged	\$ 0	\$ 6,338,376	0	6

DOR Code	Value in Moderate Damage (10 – 30%)	Value in Light Damage (less than 10%)	Bldgs in Moderate Damage (10 – 30%)	Bldgs in Light Damage (less than 10%)
Orphanages	\$ 0	\$ 31,529	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 1,262,517	2	8
Clubs, Lodges, and Union Hall	\$ 615,752	\$ 2,543,294	6	37
Sanitariums, Convalescent, an	\$ 438,976	\$ 0	6	0
Cultural Organizations	\$ 0	\$ 4,448,012	0	10
Undefined	\$ 0	\$ 0	0	0
Military	\$ 0	\$ 673,223	0	2
Forest, Park, and Recreationa	\$ 49,576	\$ 173,811	2	5
Public Schools	\$ 0	\$ 23,858,494	0	23
Colleges	\$ 0	\$ 176,470	0	1
Public Hospitals	\$ 0	\$ 18,751,330	0	11
Other Counties	\$ 29,983,658	\$ 32,362,284	66	26
Other State	\$ 0	\$ 398,776	0	7
Other Federal	\$ 0	\$ 92,279,552	0	9
Other Municipal	\$ 0	\$ 2,243,260	0	19
Gov. Owned Leased by Non-Gov.	\$ 0	\$ 52,535	0	1
Utilities	\$ 298,811	\$ 9,387,434	5	72
Mining, Petroleum, and Gas La	\$ 0	\$ 10,129	0	1
Subsurface Rights	\$ 0	\$ 0	0	0
Rights-of-Way Streets, Roads,	\$ 1,176	\$ 2,941	1	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	0	0
Outdoor Recreational	\$ 0	\$ 0	0	0
Centrally Assessed	\$ 0	\$ 0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 109,011	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.  
See documentation for details.

Population in TAOS 100 Year Wind Zone for SANTA\_ROSA County

Total Population in each zone

	Moderate Damage (10 – 30%)	Light Damage (< 10%)
TOTAL:	15,450	102,293

Population in each zone by vulnerability class

DOR Code	Moderate Damage (10 – 30%)	Light Damage (< 10%)
Total Population	15,450	102,293
Minority	973	9,948
Elderly (65+)	2,029	10,943
Disabled	4,391	35,430
Below Poverty	1,100	10,182
Single-Parent	430	3,396

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

**Structures in TAOS 100 Year Flood Zone for SANTA\_ROSA County**

	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Total:	\$ 190,748,352	\$ 464,345,376	\$ 3,278,139,904	2,039	4,616	43,566

**Value of structures in each zone by DOR Use Code**

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Single Family	\$ 160,203,072	\$ 300,926,240	\$ 2,261,666,560	1,634	3,306	29,263
Mobile Homes	\$ 2,736,698	\$ 6,435,451	\$ 107,279,936	213	400	6,405
Multi-family	\$ 40,517	\$ 1,025,058	\$ 19,551,010	1	8	118
Condominia	\$ 1,137,764	\$ 94,182,008	\$ 32,567,020	24	487	400
Cooperatives	\$ 0	\$ 0	\$ 165,141	0	0	2
Retirement Homes	\$ 0	\$ 31,223	\$ 0	0	1	0
Boarding Homes (Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Multi-family less than 10 un	\$ 1,175,137	\$ 3,170,158	\$ 51,141,208	19	50	692
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	0	0	0
Vacant Commercial	\$ 1,176	\$ 13,544	\$ 217,280	1	6	34
Stores One--Story	\$ 7,921,223	\$ 2,815,142	\$ 31,920,660	22	40	423
Mixed Use, i e., Store and Of	\$ 21,482	\$ 4,334,573	\$ 3,228,124	1	39	60
Department Stores	\$ 0	\$ 0	\$ 0	0	0	0
Supermarket	\$ 0	\$ 0	\$ 5,461,365	0	0	11
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	0	0	0
Community Shopping Centers	\$ 6,084,447	\$ 686,776	\$ 31,681,920	35	10	160
One--Story Non--Professional Of	\$ 500,188	\$ 656,276	\$ 18,923,024	10	17	263
Multi--Story Non--Professional	\$ 0	\$ 386,011	\$ 3,633,047	0	3	4
Professional Service Building	\$ 1,687,741	\$ 2,265,494	\$ 27,054,894	5	23	186
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	0	0	0
Restaurants, Cafeterias	\$ 0	\$ 6,451,188	\$ 5,181,731	0	37	45
Drive-in Restaurants	\$ 298,470	\$ 319,647	\$ 7,452,341	1	2	41
Financial Institutions	\$ 1,017,058	\$ 1,704,235	\$ 11,409,988	2	3	30

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Insurance Company Offices	\$ 0	\$ 0	\$ 0	0	0	0
Repair Service Shops	\$ 1,297,235	\$ 3,424,517	\$ 7,052,143	8	20	162
Service Stations	\$ 102,000	\$ 99,835	\$ 398,117	1	3	8
Automotive Repair, Service, a	\$ 184,717	\$ 79,636	\$ 5,845,426	3	3	97
Parking Lots, Mobile Home Sal	\$ 0	\$ 0	\$ 6,094	0	0	2
Wholesale, Manufacturing, and	\$ 0	\$ 0	\$ 115,070	0	0	3
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	0	0	9
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	0	0	1
Night Clubs, Bars, and Cockta	\$ 0	\$ 42,882	\$ 699,887	0	1	19
Bowling Alleys, Skating Rings	\$ 657,294	\$ 814,588	\$ 460,694	1	1	1
Tourist Attractions	\$ 0	\$ 4,470	\$ 138,447	0	1	3
Camps	\$ 0	\$ 0	\$ 932,202	0	0	27
Race Horse, Auto, and Dog Tra	\$ 0	\$ 0	\$ 63,952	0	0	2
Golf Courses	\$ 0	\$ 2,711,764	\$ 7,637,075	0	5	22
Hotels, Motels	\$ 0	\$ 0	\$ 6,378,694	0	0	35
Vacant Industrial	\$ 2,352	\$ 4,470	\$ 180,941	1	1	9
Light Manufacturing	\$ 257,929	\$ 532,105	\$ 12,503,166	2	4	72
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	0	0	34
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	0	0	7
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	0	0	0
Other FoNd Processing	\$ 0	\$ 0	\$ 156,551	0	0	2
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	0	0	17
WarehousÇs, and Distribution	\$ 649,282	\$ 674,489	\$ 13,095,348	13	14	238
Industrial Storage (Fuel, Equ	\$ 0	\$ 0	\$ 871,855	0	0	20

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Improved Agriculture	\$ 223,905	\$ 1,484,968	\$ 124,074,432	3	15	1,632
Cropland Soil Class 1	\$ 728,344	\$ 526,380	\$ 197,812,128	12	20	2,441
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	0	0	11
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 42,292	\$ 135,251	0	6	5
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 808,564	0	0	18
Vacant Institutional	\$ 0	\$ 0	\$ 0	0	0	0
Churches	\$ 2,153,961	\$ 2,378,862	\$ 50,304,824	10	16	251
Private Schools	\$ 0	\$ 0	\$ 3,879,250	0	0	31
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	0	0	3
Homes for Aged	\$ 0	\$ 0	\$ 6,338,376	0	0	6

DOR Code	Value in Wave/Current	Value in Flood	Value in None	Bldgs in Wave/Current	Bldgs in Flood	Bldgs in None
Orphanages	\$ 0	\$ 0	\$ 31,529	0	0	1
Mortuaries, Cemeteries	\$ 318,352	\$ 0	\$ 1,262,517	2	0	8
Clubs, Lodges, and Union Hall	\$ 656,788	\$ 137,929	\$ 2,364,329	6	3	34
Sanitariums, Convalescent, an	\$ 361,764	\$ 0	\$ 77,211	3	0	3
Cultural Organizations	\$ 0	\$ 0	\$ 4,448,012	0	0	10
Undefined	\$ 0	\$ 0	\$ 0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	0	0	2
Forest, Park, and Recreationa	\$ 32,270	\$ 0	\$ 191,117	1	0	6
Public Schools	\$ 0	\$ 0	\$ 23,858,494	0	0	23
Colleges	\$ 0	\$ 0	\$ 176,470	0	0	1
Public Hospitals	\$ 0	\$ 0	\$ 18,751,330	0	0	11
Other Co×nties	\$ 0	\$ 25,782,948	\$ 36,562,992	0	64	28
Other State	\$ 0	\$ 6,588	\$ 392,188	0	3	4
Other FeÆeral	\$ 0	\$ 117,670	\$ 92,161,880	0	1	8
Other Municipal	\$ 0	\$ 62,352	\$ 2,180,907	0	2	17
Gov. Owned Leased by Non–Gov.	\$ 0	\$ 0	\$ 52,535	0	0	1
Utilities	\$ 295,870	\$ 13,635	\$ 9,376,740	4	1	72
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	0	0	1
Subsurface Rights	\$ 0	\$ 0	\$ 0	0	0	0
Rights–of–Way Streets, Roads,	\$ 1,176	\$ 0	\$ 2,941	1	0	3
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	0	0	0
Acreage not Zoned for Agricul	\$ 0	\$ 0	\$ 109,011	0	0	8

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.



Population in TAOS 100 Year Flood Zone for SANTA\_ROSA County

Total Population in each zone

	Wave/Current	Flood	None
TOTAL:	3,315	3,830	110,598

Population in each zone by vulnerability class

DOR Code	Wave/Current	Flood	None
Total Population	3,315	3,830	110,598
Minority	164	115	10,642
Elderly (65+)	417	763	11,792
Disabled	1,012	902	37,907
Below Poverty	357	114	10,811
Single-Parent	78	113	3,635

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

Annual Economic Loss Estimates for SANTA\_ROSA County

	Total Structures	Total Exposure	Ave. Annual Loss (Wind)	Ave. Annual Loss (Water)	5mph Wind Mitigation	1ft Flood Mitigation	Earthquake Losses	Wildland Fire Losses
Total:	50,221	\$ 3,933,284,608	\$ 9,281,122	\$ 97,176,104	\$ 6,371,087	\$ 71,591,600	\$ 25,960	\$ 79,346

Value of structures in each zone by DOR Use Code

DOR Code	Total Structures	Total Exposure	Ave. Annual Loss (Wind)	Ave. Annual Loss (Water)	5mph Wind Mitigation	1ft Flood Mitigation	Earthquake Losses	Wildland Fire Losses
Single Family	34,203	\$ 2,722,803,200	\$ 6,885,153	\$ 74,394,376	\$ 4,746,014	\$ 55,698,164	\$ 17,971	\$ 60,750
Mobile Homes	7,018	\$ 116,452,256	\$ 301,573	\$ 1,327,993	\$ 199,998	\$ 1,052,136	\$ 768	\$ 2,091
Multi-family	127	\$ 20,616,586	\$ 44,670	\$ 639,191	\$ 30,359	\$ 463,916	\$ 136	\$ 424
Condominia	911	\$ 127,886,744	\$ 575,839	\$ 7,577,540	\$ 415,126	\$ 4,932,730	\$ 844	\$ 903
Cooperatives	2	\$ 165,141	\$ 201	\$ 8	\$ 123	\$ 7	\$ 1	\$ 0
Retirement Homes	1	\$ 31,223	\$ 34	\$ 1	\$ 20	\$ 1	\$ 0	\$ 0
Boarding Homes (Institutional	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Multi-family less than 10 un	761	\$ 55,486,496	\$ 132,244	\$ 796,792	\$ 90,796	\$ 571,912	\$ 366	\$ 1,054
Undefined reserved for DOR	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Vacant Commercial	41	\$ 232,001	\$ 804	\$ 942	\$ 570	\$ 667	\$ 1	\$ 7
Stores One-Story	485	\$ 42,657,024	\$ 99,785	\$ 1,634,455	\$ 68,218	\$ 1,234,097	\$ 281	\$ 1,062
Mixed Use, i.e., Store and Of	100	\$ 7,584,179	\$ 24,927	\$ 284,310	\$ 17,636	\$ 179,453	\$ 50	\$ 114
Department Stores	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Supermarket	11	\$ 5,461,365	\$ 4,840	\$ 756	\$ 2,798	\$ 612	\$ 36	\$ 90
Regional Shopping Malls	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Community Shopping Centers	205	\$ 38,453,140	\$ 105,150	\$ 1,314,084	\$ 72,879	\$ 935,755	\$ 253	\$ 654
One-Story Non-Professional Of	290	\$ 20,079,492	\$ 41,361	\$ 199,229	\$ 27,965	\$ 143,709	\$ 132	\$ 337
Multi-Story Non-Professional	7	\$ 4,019,059	\$ 17,608	\$ 12,828	\$ 12,655	\$ 9,179	\$ 26	\$ 25
Professional Service Building	214	\$ 31,008,126	\$ 66,689	\$ 887,271	\$ 45,405	\$ 642,480	\$ 204	\$ 641
Airports, Marinas, Bus Termin	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Restaurants, Cafeterias	82	\$ 11,632,920	\$ 39,427	\$ 568,292	\$ 27,908	\$ 391,567	\$ 76	\$ 143
Drive-in Restaurants	44	\$ 8,070,460	\$ 20,219	\$ 151,565	\$ 13,881	\$ 112,262	\$ 53	\$ 127
Financial Institutions	35	\$ 14,131,282	\$ 33,657	\$ 545,747	\$ 23,134	\$ 399,594	\$ 93	\$ 283

DOR Code	Total Structures	Total Exposure	Ave. Annual Loss (Wind)	Ave. Annual Loss (Water)	5mph Wind Mitigation	1ft Flood Mitigation	Earthquake Losses	Wildland Fire Losses
Insurance Company Offices	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Repair Service Shops	190	\$ 11,773,898	\$ 32,978	\$ 658,129	\$ 22,959	\$ 477,449	\$ 77	\$ 171
Service Stations	12	\$ 599,952	\$ 1,791	\$ 29,391	\$ 1,259	\$ 20,639	\$ 3	\$ 12
Automotive Repair, Service, a	103	\$ 6,109,780	\$ 10,600	\$ 61,146	\$ 7,044	\$ 43,847	\$ 40	\$ 161
Parking Lots, Mobile Home Sal	2	\$ 6,094	\$ 5	\$ 13	\$ 3	\$ 9	\$ 0	\$ 0
Wholesale, Manufacturing, and	3	\$ 115,070	\$ 99	\$ 5	\$ 57	\$ 5	\$ 0	\$ 3
Florist, Greenhouses	9	\$ 286,176	\$ 431	\$ 14	\$ 279	\$ 12	\$ 1	\$ 4
Drive-in Theaters, Open Stadi	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Enclosed Theaters, Auditorium	1	\$ 588	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Night Clubs, Bars, and Cockta	20	\$ 742,769	\$ 1,351	\$ 6,716	\$ 902	\$ 5,145	\$ 4	\$ 17
Bowling Alleys, Skating Rings	3	\$ 1,932,576	\$ 5,863	\$ 184,386	\$ 4,082	\$ 130,507	\$ 12	\$ 32
Tourist Attractions	4	\$ 142,917	\$ 563	\$ 263	\$ 403	\$ 153	\$ 0	\$ 0
Camps	27	\$ 932,202	\$ 1,815	\$ 46	\$ 1,240	\$ 41	\$ 6	\$ 5
Race Horse, Auto, and Dog Tra	2	\$ 63,952	\$ 64	\$ 3	\$ 38	\$ 2	\$ 0	\$ 0
Golf Courses	27	\$ 10,348,840	\$ 22,056	\$ 462,153	\$ 14,718	\$ 352,918	\$ 68	\$ 362
Hotels, Motels	35	\$ 6,378,694	\$ 21,280	\$ 34,906	\$ 15,015	\$ 24,496	\$ 42	\$ 59
Vacant Industrial	11	\$ 187,764	\$ 263	\$ 1,007	\$ 164	\$ 776	\$ 1	\$ 7
Light Manufacturing	78	\$ 13,293,201	\$ 17,976	\$ 211,035	\$ 11,435	\$ 160,274	\$ 87	\$ 425
Heavy Manufacturing	34	\$ 10,409,200	\$ 11,635	\$ 520	\$ 6,894	\$ 468	\$ 68	\$ 358
Lumber Yards, Sawmills, Plann	7	\$ 162,705	\$ 153	\$ 8	\$ 88	\$ 7	\$ 1	\$ 6
Fruit, Vegetables, and Meat P	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Canneries, Distilleries, and	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Other Food Processing	2	\$ 156,551	\$ 159	\$ 7	\$ 96	\$ 7	\$ 1	\$ 0
Mineral Processing	17	\$ 1,111,553	\$ 417	\$ 55	\$ 244	\$ 50	\$ 7	\$ 27
Warehouses, and Distribution	265	\$ 14,419,120	\$ 24,078	\$ 174,403	\$ 15,977	\$ 130,304	\$ 95	\$ 387
Industrial Storage (Fuel, Equ	20	\$ 871,855	\$ 2,366	\$ 18,048	\$ 1,644	\$ 13,714	\$ 5	\$ 23

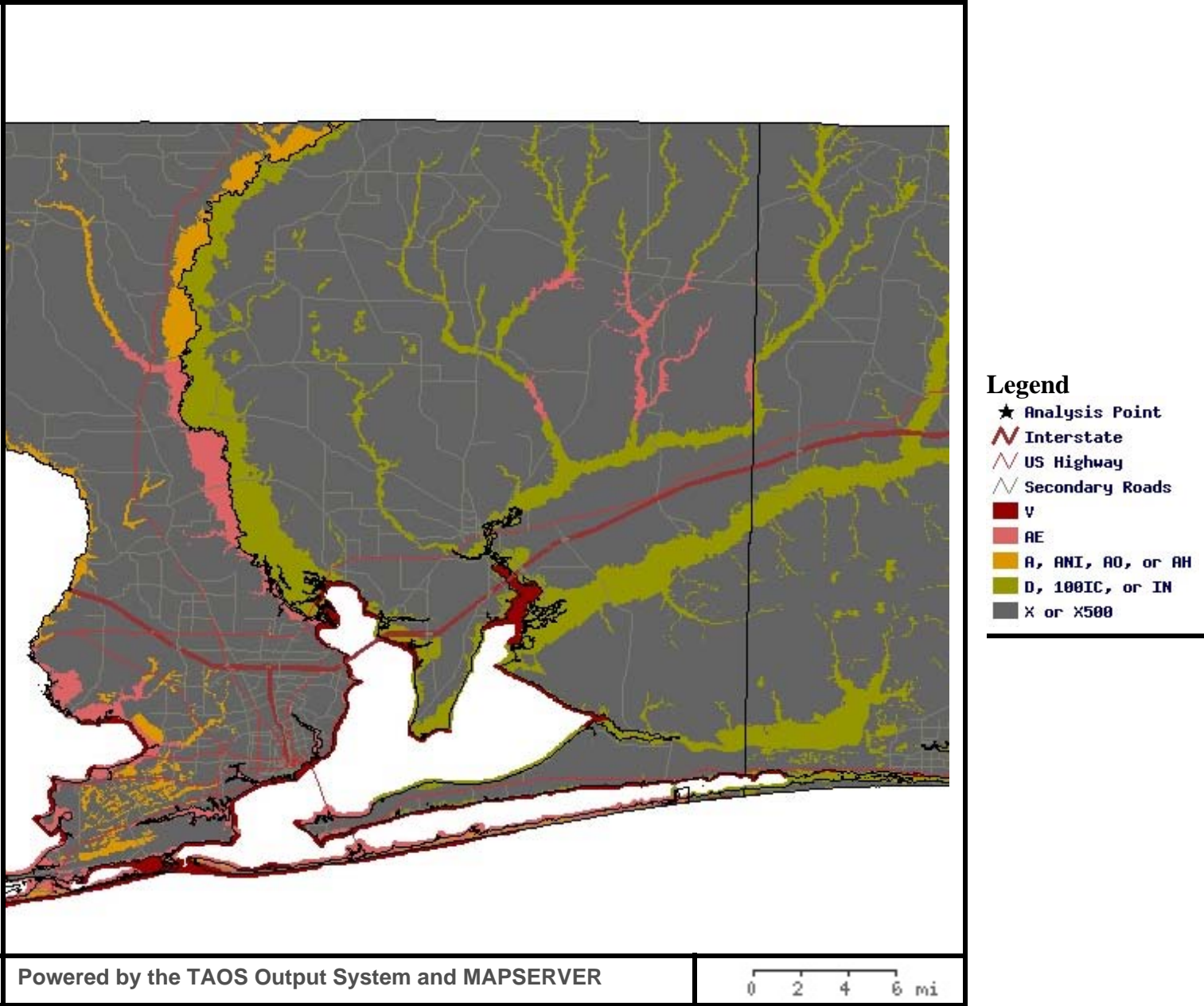
DOR Code	Total Structures	Total Exposure	Ave. Annual Loss (Wind)	Ave. Annual Loss (Water)	5mph Wind Mitigation	1ft Flood Mitigation	Earthquake Losses	Wildland Fire Losses
Improved Agriculture	1,650	\$ 125,783,312	\$ 83,413	\$ 202,369	\$ 49,890	\$ 151,337	\$ 830	\$ 1,848
Cropland Soil Class 1	2,473	\$ 199,066,816	\$ 132,755	\$ 196,307	\$ 79,225	\$ 150,700	\$ 1,314	\$ 4,436
Cropland Soil Class 2	11	\$ 285,740	\$ 210	\$ 1,224	\$ 128	\$ 891	\$ 1	\$ 2
Cropland Soil Class 3	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Timberland	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 1	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 2	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 3	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 4	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 5	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Grazing Land Soil Class 6	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Orchard, Groves, Citrus	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Poultry, Bees, Tropical Fish,	11	\$ 177,544	\$ 162	\$ 1,255	\$ 94	\$ 299	\$ 1	\$ 2
Dairies, Feed Lots	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Ornamentals, Misc. Agricultur	18	\$ 808,564	\$ 1,012	\$ 20,104	\$ 636	\$ 16,931	\$ 5	\$ 4
Vacant Institutional	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Churches	277	\$ 54,837,652	\$ 96,526	\$ 777,046	\$ 64,361	\$ 574,838	\$ 361	\$ 923
Private Schools	31	\$ 3,879,250	\$ 7,209	\$ 32,815	\$ 4,833	\$ 22,555	\$ 25	\$ 78
Private Hospitals	3	\$ 14,767,412	\$ 67,140	\$ 1,486,292	\$ 48,237	\$ 1,040,488	\$ 97	\$ 0
Homes for Aged	6	\$ 6,338,376	\$ 17,664	\$ 316	\$ 12,200	\$ 285	\$ 41	\$ 209

DOR Code	Total Structures	Total Exposure	Ave. Annual Loss (Wind)	Ave. Annual Loss (Water)	5mph Wind Mitigation	1ft Flood Mitigation	Earthquake Losses	Wildland Fire Losses
Orphanages	1	\$ 31,529	\$ 28	\$ 104	\$ 16	\$ 73	\$ 0	\$ 0
Mortuaries, Cemeteries	10	\$ 1,580,870	\$ 3,151	\$ 45,281	\$ 2,137	\$ 33,417	\$ 10	\$ 33
Clubs, Lodges, and Union Hall	43	\$ 3,159,047	\$ 6,442	\$ 80,830	\$ 4,346	\$ 60,379	\$ 20	\$ 61
Sanitariums, Convalescent, an	6	\$ 438,976	\$ 1,498	\$ 63,023	\$ 1,047	\$ 48,227	\$ 2	\$ 0
Cultural Organizations	10	\$ 4,448,012	\$ 19,000	\$ 2,078	\$ 13,636	\$ 1,560	\$ 29	\$ 6
Undefined	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Military	2	\$ 673,223	\$ 504	\$ 33	\$ 296	\$ 30	\$ 4	\$ 26
Forest, Park, and Recreationa	7	\$ 223,388	\$ 171	\$ 11	\$ 102	\$ 10	\$ 1	\$ 4
Public Schools	23	\$ 23,858,494	\$ 21,301	\$ 78,797	\$ 12,331	\$ 55,252	\$ 157	\$ 0
Colleges	1	\$ 176,470	\$ 105	\$ 8	\$ 62	\$ 7	\$ 1	\$ 0
Public Hospitals	11	\$ 18,751,330	\$ 15,134	\$ 937	\$ 8,926	\$ 843	\$ 123	\$ 540
Other Counties	92	\$ 62,345,944	\$ 154,293	\$ 1,839,040	\$ 107,068	\$ 1,181,476	\$ 411	\$ 120
Other State	7	\$ 398,776	\$ 351	\$ 40	\$ 207	\$ 32	\$ 2	\$ 1
Other Federal	9	\$ 92,279,552	\$ 81,220	\$ 69,044	\$ 46,868	\$ 49,423	\$ 609	\$ 28
Other Municipal	19	\$ 2,243,260	\$ 3,211	\$ 504	\$ 2,112	\$ 374	\$ 14	\$ 53
Gov. Owned Leased by Non-Gov.	1	\$ 52,535	\$ 36	\$ 2	\$ 20	\$ 2	\$ 0	\$ 0
Utilities	77	\$ 9,686,245	\$ 18,221	\$ 104,426	\$ 12,173	\$ 80,817	\$ 63	\$ 180
Mini	1	\$ 10,129	\$ 12	\$ 0	\$ 7	\$ 0	\$ 0	\$ 0
Subsurface Rights	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Rights-of-Way Streets, Roads,	4	\$ 4,117	\$ 13	\$ 463	\$ 9	\$ 361	\$ 0	\$ 0
Rivers, Lakes, and Submerged	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Sewage Disposal, Borrow Pits,	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Outdoor Recreational	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Centrally Assessed	0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Acreage not Zoned for Agricul	8	\$ 109,011	\$ 110	\$ 5	\$ 65	\$ 4	\$ 0	\$ 0

**Note:**

Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.



Based on FEMA Flood Insurance Rate Maps.

Structures in FEMA FIRM for SANTA\_ROSA County

	Value in AE	Value in X500	Value in X	Value in A	Value in IN	Value in VE	Value in UNDES	Value in AO	Value in OFF FIRM	Bldgs in AE	Bldgs in X500	Bldgs in X	Bldgs in A	Bldgs in IN	Bldgs in VE	Bldgs in UNDES	Bldgs in AO	Bldgs in OFF FIRM
Total:	\$ 196,289,440	\$ 105,876,968	\$ 3,107,255,296	\$ 12,000	\$ 291,439,104	\$ 223,995,904	\$ 378,058	\$ 1,646,117	\$ 6,347,848	1,249	1,033	42,147	2	3,711	1,990	10	14	65

Value of structures in each zone by DOR Use Code

DOR Code	Value in AE	Value in X500	Value in X	Value in A	Value in IN	Value in VE	Value in UNDES	Value in AO	Value in OFF FIRM	Bldgs in AE	Bldgs in X500	Bldgs in X	Bldgs in A	Bldgs in IN	Bldgs in VE	Bldgs in UNDES	Bldgs in AO	Bldgs in OFF FIRM
Single Family	\$ 69,247,520	\$ 48,010,820	\$ 2,184,093,184	\$ 0	\$ 224,783,200	\$ 190,786,048	\$ 0	\$ 1,646,117	\$ 4,227,282	612	711	28,537	0	2,701	1,585	0	14	43
Mobile Homes	\$ 2,352	\$ 1,622,978	\$ 107,843,088	\$ 0	\$ 5,851,532	\$ 1,038,275	\$ 38,411	\$ 0	\$ 55,541	1	98	6,381	0	440	86	7	0	5
Multi-family	\$ 1,176	\$ 127,376	\$ 16,261,797	\$ 0	\$ 3,940,447	\$ 285,788	\$ 0	\$ 0	\$ 0	1	1	101	0	22	2	0	0	0
Condominia	\$ 78,925,528	\$ 192,470	\$ 19,407,900	\$ 0	\$ 10,765,288	\$ 16,378,004	\$ 339,647	\$ 0	\$ 1,878,117	448	4	218	0	70	157	3	0	11
Cooperatives	\$ 0	\$ 0	\$ 165,141	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	2	0	0	0	0	0	0
Retirement Homes	\$ 0	\$ 0	\$ 0	\$ 0	\$ 31,223	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	1	0	0	0	0
Boarding Homes (Institutional)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Multi-family less than 10 un	\$ 1,599,741	\$ 1,511,224	\$ 45,493,852	\$ 0	\$ 3,530,558	\$ 3,312,147	\$ 0	\$ 0	\$ 38,988	11	16	637	0	55	41	0	0	1
Undefined reserved for DOR	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Vacant Commercial	\$ 3,529	\$ 6,094	\$ 117,685	\$ 0	\$ 5,868	\$ 98,823	\$ 0	\$ 0	\$ 0	1	2	34	0	3	1	0	0	0
Stores One-Story	\$ 1,589,764	\$ 1,937,095	\$ 33,885,120	\$ 0	\$ 2,856,896	\$ 2,388,141	\$ 0	\$ 0	\$ 0	14	30	390	0	31	20	0	0	0
Mixed Use, i e., Store and Of	\$ 4,165,905	\$ 118,223	\$ 3,023,124	\$ 0	\$ 127,714	\$ 149,211	\$ 0	\$ 0	\$ 0	34	4	56	0	4	2	0	0	0
Department Stores	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Supermarket	\$ 0	\$ 119,294	\$ 3,331,011	\$ 0	\$ 2,011,058	\$ 0	\$ 0	\$ 0	\$ 0	0	1	9	0	1	0	0	0	0
Regional Shopping Malls	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Community Shopping Centers	\$ 553,552	\$ 0	\$ 35,922,376	\$ 0	\$ 1,934,458	\$ 42,752	\$ 0	\$ 0	\$ 0	10	0	184	0	10	1	0	0	0
One-Story Non-Professional Of	\$ 684,129	\$ 909,432	\$ 16,427,293	\$ 0	\$ 1,216,900	\$ 841,729	\$ 0	\$ 0	\$ 0	5	14	237	0	21	13	0	0	0
Multi-Story Non-Professional	\$ 3,526,247	\$ 0	\$ 206,929	\$ 0	\$ 285,882	\$ 0	\$ 0	\$ 0	\$ 0	4	0	2	0	1	0	0	0	0
Professional Service Building	\$ 407,176	\$ 2,807,806	\$ 23,237,154	\$ 0	\$ 2,200,517	\$ 2,302,023	\$ 0	\$ 0	\$ 53,447	3	14	165	0	19	12	0	0	1
Airports, Marinas, Bus Termin	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0

Restaurants, Cafeterias	\$ 4,860,470	\$ 60,047	\$ 4,279,472	\$ 0	\$ 1,777,517	\$ 580,117	\$ 0	\$ 0	\$ 75,294	18	1	47	0	11	3	0	0	2
Drive-in Restaurants	\$ 302,117	\$ 772,058	\$ 5,569,989	\$ 0	\$ 1,426,294	\$ 0	\$ 0	\$ 0	\$ 0	2	4	32	0	6	0	0	0	0
Financial Institutions	\$ 1,228,470	\$ 2,909,670	\$ 9,526,906	\$ 0	\$ 130,000	\$ 336,235	\$ 0	\$ 0	\$ 0	2	5	25	0	1	2	0	0	0



DOR Code	Value in AE	Value in X500	Value in X	Value in A	Value in IN	Value in VE	Value in UNDES	Value in AO	Value in OFF FIRM	Bldgs in AE	Bldgs in X500	Bldgs in X	Bldgs in A	Bldgs in IN	Bldgs in VE	Bldgs in UNDES	Bldgs in AO	Bldgs in OFF FIRM
Insurance Company Offices	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Repair Service Shops	\$ 0	\$ 799,847	\$ 9,852,249	\$ 0	\$ 723,282	\$ 398,517	\$ 0	\$ 0	\$ 0	0	7	162	0	15	6	0	0	0
Service Stations	\$ 105,294	\$ 0	\$ 454,282	\$ 0	\$ 40,376	\$ 0	\$ 0	\$ 0	\$ 0	2	0	9	0	1	0	0	0	0
Automotive Repair, Service, a	\$ 38,000	\$ 29,941	\$ 4,695,216	\$ 0	\$ 1,194,423	\$ 152,200	\$ 0	\$ 0	\$ 0	2	2	84	0	10	5	0	0	0
Parking Lots, Mobile Home Sal	\$ 0	\$ 4,188	\$ 1,905	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	1	1	0	0	0	0	0	0
Wholesale, Manufacturing, and	\$ 66,588	\$ 0	\$ 48,482	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	1	0	2	0	0	0	0	0	0
Florist, Greenhouses	\$ 0	\$ 0	\$ 286,176	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	9	0	0	0	0	0	0
Drive-in Theaters, Open Stadi	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Enclosed Theaters, Auditorium	\$ 0	\$ 0	\$ 588	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	1	0	0	0	0	0	0
Night Clubs, Bars, and Cockta	\$ 0	\$ 0	\$ 616,491	\$ 0	\$ 75,442	\$ 50,835	\$ 0	\$ 0	\$ 0	0	0	14	0	3	3	0	0	0
Bowling Alleys, Skating Rings	\$ 0	\$ 657,294	\$ 1,275,282	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	1	2	0	0	0	0	0	0
Tourist Attractions	\$ 0	\$ 0	\$ 138,447	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 4,470	0	0	3	0	0	0	0	0	1
Camps	\$ 0	\$ 0	\$ 709,790	\$ 0	\$ 9,117	\$ 213,294	\$ 0	\$ 0	\$ 0	0	0	22	0	1	4	0	0	0
Race Horse, Auto, and Dog Tra	\$ 0	\$ 10,588	\$ 53,364	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	1	1	0	0	0	0	0	0
Golf Courses	\$ 0	\$ 0	\$ 10,348,840	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	27	0	0	0	0	0	0
Hotels, Motels	\$ 0	\$ 72,658	\$ 6,306,035	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	2	33	0	0	0	0	0	0
Vacant Industrial	\$ 0	\$ 0	\$ 185,411	\$ 0	\$ 0	\$ 2,352	\$ 0	\$ 0	\$ 0	0	0	10	0	0	1	0	0	0
Light Manufacturing	\$ 0	\$ 53,517	\$ 12,701,209	\$ 0	\$ 506,117	\$ 32,357	\$ 0	\$ 0	\$ 0	0	2	71	0	4	1	0	0	0
Heavy Manufacturing	\$ 0	\$ 0	\$ 10,409,200	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	34	0	0	0	0	0	0
Lumber Yards, Sawmills, Plann	\$ 0	\$ 0	\$ 162,705	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	7	0	0	0	0	0	0
Fruit, Vegetables, and Meat P	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Canneries, Distilleries, and	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Other Food ProceÖsing	\$ 0	\$ 0	\$ 156,551	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	2	0	0	0	0	0	0
Mineral Processing	\$ 0	\$ 0	\$ 1,111,553	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	17	0	0	0	0	0	0
	\$ 0	\$ 100,018	\$ 13,424,849	\$ 0	\$ 344,818	\$ 549,435	\$ 0	\$ 0	\$ 0	0	3	243	0	10	9	0	0	0

Warehouses, And Distribution																	
Industrial Storage (Fuel, Equ	\$ 0	\$ 0	\$ 871,855	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	20	0	0	0	0	0

DOR Code	Value in AE	Value in X500	Value in X	Value in A	Value in IN	Value in VE	Value in UNDES	Value in AO	Value in OFF FIRM	Bldgs in AE	Bldgs in X500	Bldgs in X	Bldgs in A	Bldgs in IN	Bldgs in VE	Bldgs in UNDES	Bldgs in AO	Bldgs in OFF FIRM
Improved Agriculture	\$ 361,305	\$ 1,051,923	\$ 117,520,000	\$ 0	\$ 6,362,270	\$ 487,829	\$ 0	\$ 0	\$ 0	5	16	1,564	0	62	3	0	0	0
Cropland Soil Class 1	\$ 195,108	\$ 2,314,396	\$ 181,182,592	\$ 12,000	\$ 13,793,987	\$ 1,568,795	\$ 0	\$ 0	\$ 0	7	26	2,255	2	160	23	0	0	0
Cropland Soil Class 2	\$ 0	\$ 0	\$ 285,740	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	11	0	0	0	0	0	0
Cropland Soil Class 3	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Timberland	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Grazing Land Soil Class 1	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Grazing Land Soil Class 2	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Grazing Land Soil Class 3	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Grazing Land Soil Class 4	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Grazing Land Soil Class 5	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Grazing Land Soil Class 6	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Orchard, Groves, Citrus	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Poultry, Bees, Tropical Fish,	\$ 0	\$ 0	\$ 177,544	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	11	0	0	0	0	0	0
Dairies, Feed Lots	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Ornamentals, Misc. Agricultur	\$ 0	\$ 0	\$ 658,282	\$ 0	\$ 150,282	\$ 0	\$ 0	\$ 0	\$ 0	0	0	15	0	3	0	0	0	0
Vacant Institutional	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Churches	\$ 1,377,058	\$ 4,914,285	\$ 45,869,724	\$ 0	\$ 2,520,705	\$ 155,882	\$ 0	\$ 0	\$ 0	2	23	228	0	22	2	0	0	0
Private Schools	\$ 0	\$ 0	\$ 3,476,144	\$ 0	\$ 385,458	\$ 17,647	\$ 0	\$ 0	\$ 0	0	0	27	0	3	1	0	0	0
Private Hospitals	\$ 0	\$ 0	\$ 14,767,412	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	3	0	0	0	0	0	0
Homes for Aged	\$ 0	\$ 2,207,894	\$ 4,130,482	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	2	4	0	0	0	0	0	0

DOR Code	Value in AE	Value in X500	Value in X	Value in A	Value in IN	Value in VE	Value in UNDES	Value in AO	Value in OFF FIRM	Bldgs in AE	Bldgs in X500	Bldgs in X	Bldgs in A	Bldgs in IN	Bldgs in VE	Bldgs in UNDES	Bldgs in AO	Bldgs in OFF FIRM
Orphanages	\$ 0	\$ 31,529	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	1	0	0	0	0	0	0	0
Mortuaries, Cemeteries	\$ 0	\$ 0	\$ 1,580,870	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	10	0	0	0	0	0	0
Clubs, Lodges, and Union Hall	\$ 293,082	\$ 463,248	\$ 2,248,069	\$ 0	\$ 154,647	\$ 0	\$ 0	\$ 0	\$ 0	1	6	33	0	3	0	0	0	0
Sanitariums, Convalescent, an	\$ 0	\$ 0	\$ 438,976	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	6	0	0	0	0	0	0
Cultural Organizations	\$ 3,671,764	\$ 299,200	\$ 477,047	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	4	3	3	0	0	0	0	0	0
Undefined	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Military	\$ 0	\$ 0	\$ 673,223	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	2	0	0	0	0	0	0
Forest, Park, and Recreationa	\$ 0	\$ 0	\$ 159,047	\$ 0	\$ 64,341	\$ 0	\$ 0	\$ 0	\$ 0	0	0	4	0	3	0	0	0	0
Public Schools	\$ 0	\$ 23,858,494	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	23	0	0	0	0	0	0	0
Colleges	\$ 0	\$ 0	\$ 176,470	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	1	0	0	0	0	0	0
Public Hospitals	\$ 0	\$ 26,470	\$ 18,724,858	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	1	10	0	0	0	0	0	0
Other Counties	\$ 22,950,238	\$ 6,470,400	\$ 29,886,672	\$ 0	\$ 1,805,447	\$ 1,218,470	\$ 0	\$ 0	\$ 14,705	56	1	25	0	5	4	0	0	1
Other State	\$ 0	\$ 1,176	\$ 397,600	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	1	6	0	0	0	0	0	0
Other Federal	\$ 0	\$ 941,211	\$ 91,220,664	\$ 0	\$ 117,670	\$ 0	\$ 0	\$ 0	\$ 0	0	2	6	0	1	0	0	0	0
Other Municipal	\$ 133,058	\$ 58,152	\$ 1,989,695	\$ 0	\$ 62,352	\$ 0	\$ 0	\$ 0	\$ 0	3	2	12	0	2	0	0	0	0
Gov. Owned Leased by Non-Gov.	\$ 0	\$ 0	\$ 52,535	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	1	0	0	0	0	0	0
Utilities	\$ 0	\$ 405,941	\$ 8,429,206	\$ 0	\$ 242,076	\$ 609,023	\$ 0	\$ 0	\$ 0	0	2	67	0	5	3	0	0	0
Mining, Petroleum, and Gas La	\$ 0	\$ 0	\$ 10,129	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	1	0	0	0	0	0	0
Subsurface Rights	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Rights-of-Way Streets, Roads,	\$ 0	\$ 0	\$ 4,117	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	4	0	0	0	0	0	0
Rivers, Lakes, and Submerged	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Sewage Disposal, Borrow Pits,	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Outdoor Recreational	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Centrally Assessed	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	0	0	0	0	0	0	0	0	0
Acreeage not Zoned for Agricul	\$ 0	\$ 0	\$ 98,470	\$ 0	\$ 10,541	\$ 0	\$ 0	\$ 0	\$ 0	0	0	7	0	1	0	0	0	0

**Note:**  
Values and number of buildings as reported by the Florida Dept. of Revenue for 2000.

See documentation for details.

Population in FEMA FIRM for SANTA\_ROSA County

Total Population in each zone

	AE	X500	X	IN	VE	UNDES
TOTAL:	624	820	96,015	10,640	7,798	1,846

Population in each zone by vulnerability class

DOR Code	AE	X500	X	IN	VE	UNDES
Total Population	624	820	96,015	10,640	7,798	1,846
Minority	21	64	9,484	760	532	60
Elderly (65+)	58	101	10,325	993	1,165	330
Disabled	241	298	33,329	3,761	1,590	602
Below Poverty	126	65	9,645	944	322	180
Single-Parent	13	22	3,201	306	234	50

**Note:**  
Population estimates from Census 2000.  
See documentation for details.

## Data Sources and Methods

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**HxxxWIND**, where xxx is the return period in years, e.g. H50WIND is the 50 year wind speed.

Format: Integer

Values: Peak two minute 10 meter (ASOS compatible) wind speed in miles per hour.

This variable contains the maximum likelihood estimate (MLE) peak wind speed for 10, 25, 50, and 100 year return periods.

References:

Johnson, M. E. and C. C. Watson. (1999). Hurricane Return Period Estimation, *10th Symposium on Global Change Studies*, Dallas, TX, 478–479.

Watson, C. C., Jr. 2002: Using integrated multihazard numerical models in coastal storm hazard planning, *Solutions for Coastal Disasters* (sponsored by ASCE and NOAA), San Diego, CA.

**HxxxWATER**, where xxx is the return period in years, e.g. H50WATER is the 50 year storm surge height.

Format: Integer

Values: Peak storm surge in feet above mean sea level.

This variable contains the maximum likelihood estimate (MLE) peak storm surge for 10, 25, 50, and 100 year return periods.

References:

Johnson, M. E., 1997: Caribbean Storm Surge Return Periods, Organization of American States Caribbean Disaster Mitigation Project Workshop, Kingston, Jamaica, October 31, 1997.

Johnson, M. E. and C. C. Watson. (1999). Hurricane Return Period Estimation, *10th Symposium on Global Change Studies*, Dallas, TX, 478–479.

Watson, C. C., Jr. 2002: Using integrated multihazard numerical models in coastal storm hazard planning, *Solutions for Coastal Disasters* (sponsored by ASCE and NOAA), San Diego, CA.

**SSxWIND,** where x is the Saffir/Simpson storm category, e.g. SS3WIND is the peak wind expected at the site as a result of a storm with category three intensity at landfall.

Format: Integer

Values: Peak two minute 10 meter (ASOS compatible) wind speed in miles per hour.

This variable contains peak wind speed expected at the site as a result of a storm of the given category making landfall anywhere in the state. The following wind speeds were used at landfall:

Category	Wind Speed
1	85 mph
2	100 mph
3	122 mph
4	145 mph
5	165 mph

References:

Watson, C. C., Jr., 1995: The Arbiter Of Storms: a high resolution, GIS based storm hazard model, *National Weather Digest*, **20**, 2–9.

Watson, C. C. and M. E. Johnson. (1999). Design, Implementation, and Operation of a Modular Integrated Tropical Cyclone Hazard Model, *AMS 23<sup>rd</sup> Conference on Hurricanes and Tropical Meteorology*, Dallas, TX.

**SSxWATER,** where x is the Saffir/Simpson storm category, e.g. SS3WATER is the storm surge expected at the site as a result of a storm with category three intensity at landfall.

Format: Integer

Values: Peak storm surge in feet above mean sea level.

This variable contains the peak storm surge expected at the site for a given Saffir/Simpson storm category.

References:

Watson, C. C., Jr., 1995: The Arbiter Of Storms: a high resolution, GIS based storm hazard model, *National Weather Digest*, **20**, 2–9.

Watson, C. C., Jr. 2002: Using integrated multihazard numerical models in coastal storm hazard planning, *Solutions for Coastal Disasters* (sponsored by ASCE and NOAA), San Diego, CA.



**WINDLC, Wind Damage Loss Cost.**

Format: Float

Values: Loss cost in dollars per \$1000 of exposure for wind damage.

This variable contains the expected annual loss due to wind damage for a typical structure, expressed in dollars per \$1000 of exposure. Wind loss costs include damage from hurricanes, tornadoes and severe thunderstorms, and winter storms. For example, a structure valued at \$150,000 with a loss cost of \$1.87 per \$1000 would be expected to suffer average losses of \$280.50 in wind damage per year. Note that most years would be no damage, but some years would be considerably higher due to a direct hit by a hurricane or tornado. Loss costs are valuable for comparing the risk between locations, as well as ascertaining the long term benefits of mitigation.

References:

Watson, C. C. Jr., and Johnson, M.E., 2003: *An assessment of computer based estimates of hurricane loss costs in North Carolina*, Kinetic Analysis Corporation, Savannah, GA; available on-line at <http://www.methaz.com/ncdoi/>.

Watson, C. C., Jr. 2002: Using integrated multihazard numerical models in coastal storm hazard planning, *Solutions for Coastal Disasters* (sponsored by ASCE and NOAA), San Diego, CA.

**FLOODLC, flood damage loss cost.**

Format: Float

Values: Loss cost in dollars per \$1000 of exposure for flood damage.

This variable contains the expected annual loss due to flood damage for a typical structure, expressed in dollars per \$1000 of exposure. Flood loss costs include hurricane storm surge, riverine flooding, and flooding from winter storms. For example, a structure valued at \$150,000 with a loss cost of \$1.87 per \$1000 would be expected to suffer average losses of \$280.50 in flood damage per year. Note that most years would be no damage, but some years would be considerably higher due to a direct hit by a hurricane or riverine flood event. Loss costs are valuable for comparing the risk between locations, as well as ascertaining the long term benefits of mitigation.

References:

Watson, C. C. Jr., and Johnson, M.E., 2003: *An assessment of computer based estimates of hurricane loss costs in North Carolina*, Kinetic Analysis Corporation, Savannah, GA; available on-line at <http://www.methaz.com/ncdoi/>.

Watson, C. C., Jr. 2002: Using integrated multihazard numerical models in coastal storm hazard planning, *Solutions for Coastal Disasters* (sponsored by ASCE and NOAA), San Diego, CA.

**WINDSLC**, **Wind** Damage Loss Cost, assuming 5mph performance improvement.

Format: Float

Values: Loss cost in dollars per \$1000 of exposure for wind damage.

This variable contains the expected annual loss due to wind damage for a typical structure, expressed in dollars per \$1000 of exposure, assuming that the performance of the structure has been improved by 5mph. For example, a typical wood frame structure will begin to sustain damage in 40mph winds, and be totally destroyed with 160mph sustained winds. The 5 mph improved structure would not see damage until 45mph.

Reference:

Watson, C., Johnson, M., and Simons, M., 2004: Insurance Rate Filings and Hurricane Loss Estimation Models, Journal of Insurance Research, Spring 2004 (in press).

**FLOODILC**, flood damage loss cost, assuming 1ft mitigation effort.

Format: Float

Values: Loss cost in dollars per \$1000 of exposure for flood damage.

This variable contains the expected annual loss due to flood damage for a typical structure, expressed in dollars per \$1000 of exposure, assuming that flood events are reduced by 1ft. To achieve a 1ft mitigation, the structure could be raised by 1 ft, or engineering works could be put in place to reduce peak floods by 1 ft.

Reference:

Watson, C., Johnson, M., and Simons, M., 2004: Insurance Rate Filings and Hurricane Loss Estimation Models, Journal of Insurance Research, Spring 2004 (in press).

**SFLOOD, Supplemental Flood Damage**

Format: Text  
Values: Four possible values

- 1) damaging floods recur every 10 years or less.
- 2) 25 year flood plain.
- 3) 50 year flood plain.
- 4) 100 year or greater.

This variable contains a general assessment of the potential of the site for flooding by rainfall, ponding, or riverine flooding.

References:  
Watson, C. C., Jr. 2002: Using integrated multihazard numerical models in coastal storm hazard planning, *Solutions for Coastal Disasters* (sponsored by ASCE and NOAA), San Diego, CA.

**SINKPOT, Sinkhole Potential**

Format: Text  
Values: Five possible values as noted below.

This variable contains a general assessment of the potential of the site for sinkhole development. Sinkhole potential was computed as follows. Sinkhole potential was determined according to points assigned to each 90m grid cell in the state. Three classes of points were assigned, for distance to historic sinkholes, geology, and soils:

- 2 points if cell was within 2000m of an existing sinkhole;
- 1 point if cell between 2000m and 5000m of an existing sinkhole;
- 1 point if the cell was in the same USGS surface geologic unit as an existing sinkhole;
- 1 point if the cell was in the same NRCS soil unit as an existing sinkhole.

Thus, each cell received an ultimate value of from 0 to 4:

- 0: Very Low risk
- 1: low risk
- 2: moderate risk
- 3: high risk
- 4 very high risk.

References:  
Sinclair, W., and J. Stewart, 1985: *Sinkhole Type, Development, and Distribution in Florida*, USGS, Tallahassee, FL.

**EQUAKE, Earthquake Risk**

Format: Text  
Values: Four Possible Values.

The USGS 50 year 10% likelihood data set was used to assign earthquake risk. The peak ground acceleration (PGA) value was used to create four zones:

< 0.01g	Almost none
0.01g	Minimal
0.02g	Very low
0.03g	Low

Note that the earthquake risk, even in the highest risk zone in the state, is quite small.

References:

Frankel, Arthur, Mueller, Charles, Barnhard, Theodore, Perkins, David, Leyendecker, E.V., Dickman, Nancy, Hanson, Stanley, and Hopper, Margaret, 1997, Seismic–hazard maps for the conterminous United States, Map F – Horizontal spectral response acceleration for 0.2 second period (5% of critical damping) with 2% probability of exceedance in 50 years, U.S. Geological Survey Open–File Report 97–131–F.

Arthur D. Frankel, Mark D. Petersen, Charles S. Mueller, Kathleen M. Haller, Russell L. Wheeler, E. V. Leyendecker, Robert L. Wesson, Stephen C. Harmsen, Chris H. Cramer, David M. Perkins, and Kenneth S. Rukstales, Documentation for the 2002 Update of the National Seismic Hazard Maps, Open–file Report 02–420

**TORNADO**, Tornado Risk

Format:       Text

Values:       Three Possible Values.

Tornado track data since 1950 from the National Weather Service was analyzed to determine the annual probability that a tornado would cause damage to a structure in each 90m grid cell in Florida. The data was stratified in to four classes:

- High risk (1 in 100 or greater),
- Medium risk (1 in 101 to 1 in 250),
- Low (1 in 250 to 1 in 500 chance).

Additional data sets include thunderstorm and hail damage reports, which were converted to shape files and included in the GIS data sets.

Reference:

National Severe Storms Laboratory SVRLOT2 Data bases, NSSL, Norman, OK.

**TSUNAMI**, Tsunami Risk

Format:       Text

Values:       Two Possible Values.

Tsunami risk in Florida is difficult to assess, as there are no reliable historical records and few publications on the subject. Therefore, simulation techniques were used. Three types of events were simulated: Caribbean volcanic events, Caribbean and Central American earthquakes, and East Atlantic (the Cumbre Vieja volcano, on the island of La Palma, in the Canary Islands) volcanic events. In general, on the Gulf Coast of Florida, these events produced at worst a 4 meter wave, while in some parts of the Atlantic coast this value grew to 6 to 7 meters. Expert Opinion suggests that these would be approximately 1 in 500 year events. Note that these areas are mostly in the Category 5 hurricane zone, which is probably an event of comparable frequency in North Florida. However, a tsunami wave from the worst case La Palma event would more than likely inundate the entire Atlantic coastline, as opposed to only a few dozen miles of coastline in the case of a hurricane. The potential and magnitude of such an event is highly controversial, with a minority of researchers suggesting waves as high as 40 meters, with most estimates in the 5 meter range.

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Reference:

Internal KAC Analysis.

**FEMAFIRM**, FEMA Flood Insurance Rate Map Zones

Format:       Text

Values:       14 Possible Values.

This data layer reports the FEMA FIRM zones, for 57 of the 67 counties in Florida. This data layer was created by combining the county level data sets available from the University of Florida Geoplan Centers Florida Geographic Data Library, at <http://www.fgdl.org>. The original data sets were reprojected from Albers to Geographic for compatibility with mapserver.

Reference:

Federal Insurance Administration, 1992: *Guidelines and specifications for Study Contractors (FEMA–37)*, FEMA, Washington, D.C.

**FIREPOT**, Wildland Fire Potential

Format: Text

Values: Three Values: Low, Medium, High.

**FIRELC**, Loss Cost due to Wildland Fires.

Format: Float

Values: Loss cost in dollars per \$1000 of exposure for wildland fire damage.

The first variable is an assessment of the relative hazard of wildland fires based on the potential fuel within 500 meters of the location. The second variable contains the expected annual loss due to wildland fire damage, expressed in dollars per \$1000 of exposure.

Note: these layers were created to support the calculation of economic losses from wildland fires and the creation of a loss cost compatible with the other data layers in this study. The approach used was designed for compatibility with the requirements of the Disaster Mitigation Act of 2000, and while statistically and scientifically valid, these layers should *not* be considered as the official wildland fire risk data set used by the State of Florida. The Florida Division of Forestry has created the Florida Fire Risk Analysis System (FRAS), which should be referenced for other wildland fire assessment purposes.

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Methodology:

The Arbiter Of Storms (TAOS) hazard modeling system uses land cover data sets derived from LANDSAT images (Watson and Johnson, 1999, Watson, 2002). The LANDSAT images are processed to create a land cover data layer using the Anderson classification (Anderson et al, 1976), with checks and updates using 2003 MODIS images. In TAOS, each Anderson level II classification has values associated with for wind and water friction values (specifically, friction length  $z_0$  and Mannings N). For the wild fire analysis, an additional field was added to equate the Anderson classification with fuel models used in the National Fire Danger Rating System (Burgan et al, 2000). These fuel models are an indication of the ability of a fire to start and spread in the given terrain type, and are used as the input to the Fire Potential Index as well as fire spreading models. The resulting map was compared with the NFDR Fuel Model Map created by the US Forest Service (USFS). The NFDR Fuel Model Map is used for the next generation fire danger rating system being developed by USFS, and is a nationwide map at a resolution of 1000 meters per grid cell based on data from 1997. The KAC developed map for Florida is at a resolution of 90 meters, and compares well the much more general national map while providing a great deal of additional detail, as well as being more up to date due to land cover changes.

Each of the fuel models was assigned to a risk code of low, medium, or high, based on fire spreading potential during a climatologically dry year, and processed with the statewide parcel data base to create the tables supplied with the LMS analysis. The mode of the fuel types within 500 meters of the parcel was used to determine risk category for the parcel.

The numerical approach outlined in Turcotte et al, 2002, was used for determining probability and extent of fires. Due to the limited availability of suitable climatological data, additional data was obtained from 100 years of simulated climate from a series of runs using the Community Climate Model (CCM) Version 3.2. The Haines Index (Haines 1988) was used to assess days favorable for fire ignition and development, which was used as the basis for the temporal probability of occurrence. A full description of the approach will be submitted in a forthcoming journal paper.

References:

Anderson, J.F., Hardy, E.E., Roach, J.T., Witmer, R.E.: 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964, 28pp.

Burgan, R, Klaver, R, and Klaver, J: 2000. Fuel Models and Fire Potential from Satellite and Surface Observations, USDA Forest Service Science and Applications Branch, 15pp.

Goodrick, S., D. Wade, J. Brinner, G. Babb, and W. Thomson, Relationship of daily fire activity to the Haines index and the Lavdas dispersion index during 1998 Florida wildfires, Ecological and Economic Consequences of the 1998 Florida Wildfires.

Harrison, M. and C. Meindl, 2001: A statistical relationship between El Niño–Southern Oscillation and Florida wildfire occurrence. *Physical Geography* 22: 187–203.

Mercer, D. J. Pye, J. Prestemon, D. Butry, and T. Homes, 2000: Economic Effects of Catastrophic Wildfires, Final Report, Topic 8 of the Research Grant, Ecological and Economic Consequences of the 1998 Florida Wildfires.

Turcotte, D., B. Malamud, F. Guzzetti, and P. Reichenbach, 2002: Self–organization, the cascade model, and natural hazards, *Proceedings of the National Academy of Sciences*, Vol. 99, Suppl. 1, 2530–2537.

Watson, C. C., Jr., 1995: The Arbiter Of Storms: a high resolution, GIS based storm hazard model, *National Weather Digest*, **20**, 2–9.

Watson, C. C. and M. E. Johnson. (1999). Design, Implementation, and Operation of a Modular Integrated Tropical Cyclone Hazard Model, *AMS 23<sup>rd</sup> Conference on Hurricanes and Tropical Meteorology*, Dallas, TX.



# **Bylaws of the Santa Rosa County Local Mitigation Strategy (LMS) Task Force**

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## **ARTICLE I. PURPOSES OF THE TASK FORCE**

The purpose of the Santa Rosa County Local Mitigation Strategy (LMS) Task Force is to plan for a decrease in the vulnerability of the citizens, governments, businesses and institutions of Santa Rosa County to the future human, economic and environmental costs of natural, technological, and societal disasters. The Task Force will develop, monitor, implement, and maintain a comprehensive multi-jurisdictional plan for hazard mitigation that will be intended to accomplish this purpose and to promote a sustainable and disaster-resistant community.

## **ARTICLE II. MEMBERSHIP**

Membership in the Task Force is open to all jurisdictions, organizations and individuals supporting its purposes. Membership is accomplished through the completion of a Member Information Form. The Member Information Form should be submitted to the Task Force Chair for a signature of acknowledgement. The Chair shall submit all Member Information Forms to the LMS Support Planner for processing into the Task Force Membership Database.

Steering Committee alternate members shall also be required to submit a Member Information Form.

## **ARTICLE III. ORGANIZATIONAL STRUCTURE**

The organizational structure of the Task Force shall consist of three permanent components: a Steering Committee, a Working Committee, and a support planner. Temporary subcommittees may be formed as deemed necessary by the Chair of the Steering Committee.

### **A. *The Steering Committee***

The Task Force shall be guided by a decision-making and voting body called the Steering Committee. The make-up of the Steering Committee shall be well conceived and well balanced with representatives from the following:

- At least one appointed representative and one designated alternate from the government of Santa Rosa County and each participating incorporated municipality,
- At least one representative and one alternate from voluntary participating organizations and associations representing key business, industry, community interest groups and others as listed in 9G-22.004 FAC, and
- Other individuals and their designated volunteer alternates as deemed appropriate by the Steering Committee to ensure well-balanced representation on the Steering Committee.

Ideally, Steering Committee members should have authority or responsibility for implementing proposed mitigation initiatives when resources to do become available.

The Steering Committee shall be the central core decision-making and voting component of the Task Force. Members of the Steering Committee may also serve in the broader Working Group



component of the Task Force. Each Steering Committee member shall have one vote on formal motions made by the LMS Task Force.

The Steering Committee will provide a formal and stable core to the Task Force. Steering Committee members will serve as the official representative and spokesperson for the organization regarding the activities and decisions of the LMS Task Force. The roles and responsibilities of the Steering Committee members are described in Article V.

To **maintain good standing**, members of the Steering Committee must not have more than two unexcused absences from meetings during the course of a year.

Excused Absence Defined: An absence may be excused if the member's alternate attends in his/her place. If the member's alternate cannot attend in the member's place, the Chairperson may excuse the member's absence if the member notifies the Chairperson prior to the meeting that family sickness or death or other unavoidable and critical work or family conflict will not permit attendance at the specified meeting.

Criteria for Member Alternates: Each member of the Steering Committee may designate one alternate to assist them in fulfilling their roles and responsibilities on the Steering Committee and the Task Force as a whole. The alternate member may have one vote only when the primary member is absent. To maintain a well-balanced membership, the designated alternate should represent the same entity as the primary member. Alternate members of individual citizens shall also be individual citizens and not represent any other entity. A Steering Committee member cannot serve as an alternate member for another member.

Based on long-standing Steering Committee status prior to the establishment of these Bylaws, representatives from the following departments/organizations will serve as members of the initial Steering Committee under these Bylaws. Additional Steering Committee members will be added as the Task Force as a whole grows in membership and as representation is needed to maintain a well-conceived and well-balanced Steering Committee.

<b>Makeup of Santa Rosa County LMS Steering Committee</b> May 2003	
Organization/Department	
1	Santa Rosa County Grants Coordinator
2	Gulf Breeze Chamber
3	Santa Rosa County Emergency Manager Director
4	Town of Jay
5	City of Milton
6	Santa Rosa County Community Rating System (CRS) Coordinator
7	Santa Rosa County Planning Department
8	American Red Cross
9	Board of County Commissioners
See Attachment A	

## **B.     *The Working Committee***

The Working Committee component of the LMS Task Force shall have Planning and Public Information roles and responsibilities. Membership in and/or participation on the LMS Working Committee are open to all interested jurisdictions, organizations and individuals.

Membership of the Working Committee shall include representatives from departments of local governments and other entities as specified in 9G-22.004(2)(a)(b)(c) FAC. These entities include representatives from various agencies of county [and municipal] government that may include, but not be limited to, planning and zoning, roads, public works, and emergency management. In addition, representatives from interested private organizations, civic organizations, trade and commercial support groups, property owners associations, Native American Tribes or authorized tribal organizations, water management districts, regional planning councils, independent special districts and non-profit organizations. Members of the Steering Committee that represent the 9G-22 entities may also be considered in meeting the 9G-22 FAC requirements.

The Working Committee may as an option form two sub-committees to more equitably distribute the planning and public information roles and responsibilities described in Article V.

Temporary subcommittees may be established at any time for special purposes by the chair of the Steering Committee, and their membership designated at that time.

## **C.     *Planning Support Staff***

Santa Rosa County, or other agency as so designated by the Board of County Commissioners, will serve as the program LMS support planner or planning staff for the Task Force, and assist in the facilitation, coordination and support of the Task Force's activities. Roles and responsibilities of the LMS support planner are described in Article V.

## **ARTICLE IV.           TASK FORCE OFFICERS**

Any member in good standing of the Steering Committee is eligible for **election** as an officer. The LMS Task Force will have a chair, vice-chair and a secretary. The chair and vice-chair shall be elected by a majority vote of a quorum of the Steering Committee members. Each officer will serve a term of one year, and be eligible for re-election for an unlimited number of terms.

The chair of the Task Force will preside at each meeting of the Task Force as well as establish temporary subcommittees and assign personnel to them. The vice chair will fulfill the duties and responsibilities of the chair in his or her absence. The secretary will assist in the important task of meeting documentation by taking meeting notes at each Task Force meeting.

Duties and Responsibilities of the Task Force Officers will include, but shall not be limited to:

The Task Force Chair shall:

- Conduct the Task Force Meetings as outlined in the agenda and according to Robert's Rules of Order when necessary.

- Assist the LMS Support Planner in setting meeting agendas.
- Pre-approve meeting minutes prior to distribution to the Task Force and others.
- Maintain a Task Force file of all documentation (letters, plans, state and federal handouts/documents, etc.) received while in office and transfer the file to the next elected chairperson.
- Establish formation of temporary sub-committees and assign members to serve
- Distribute minutes, meeting notices, and general Task Force outreach
- Oversee the **Planning Component** of the Task Force Roles and Responsibilities

The Task Force Vice-Chair shall:

Fulfill the roles and responsibilities of the chairperson in his/her absence.

Oversee the **Public Information** component of the Task Force Roles and Responsibilities

## **ARTICLE V. RESPONSIBILITIES**

### **A. Steering Committee**

The Steering Committee will be responsible for oversight and coordination of all actions and decisions by the Task Force, and is solely responsible for formal actions in the name of the Task Force, including the release of reports, development of resolutions, issuance of position papers, and similar activities. The Steering Committee makes task assignments to the Working Committee, coordinates their work, and takes action on their recommendations.

Other roles and responsibilities may include but not be limited to:

- Approve the mitigation initiatives for incorporation into the plan, the priority of those initiatives, and the removal or termination of initiatives.
- Set guidelines for the total mitigation planning effort.
- Serve as the official body to represent the overall planning process.
- Serve as the official liaison of the Task Force to the community.

Presents the plan to communities and the local elected bodies.

### **B. Working Committee**

The Working Committee shall have two categories of responsibilities—planning and public information. These responsibilities are described below:

**Planning** – The Planning responsibilities include undertaking and coordinating the actual technical analysis and planning activities fundamental to the development of an LMS plan. Activities will include identifying, analyzing, and monitoring the hazards threatening Santa Rosa County and the vulnerabilities of the community to those hazards, as well as assisting in the definition of actions, policies, or programs to mitigate the impacts of those hazards; defining structural and non-structural actions needed to decrease the human, economic and environmental impacts of disasters, and preparing for consideration and action by the Steering Committee a strategy for implementation of those initiatives in both the pre- and post-disaster time frame; defining the general financial vulnerability of the community to the impacts of disasters; assisting with identification, characterization, and prioritization of initiatives to minimize vulnerabilities; and identifying potential funding sources for all priority mitigation

initiatives identified in the mitigation strategy developed by the Task Force. In addition, planning responsibilities include assessing the communities' policies, regulations, and programs and making subsequent recommendations to enhance or strengthen the mitigation components of those planning documents (known as capabilities assessment). Planning responsibilities shall include any other planning activity required by CFR 44 Part 201, 9G-22 FAC or any other federal and state mitigation requirements.

**Public Information** – Public Information responsibilities include those specified in CFR 44 Part 201, FEMA Region IV Minimum Standards of Responsibilities, 9G-22 FAC or any other federal and state mitigation requirements. These responsibilities include, but are not limited to securing public input and comment on the efforts of the Task Force; informing the public about the activities of the Task Force; conducting public information and education programs regarding hazard mitigation and informing the community about the vulnerability to future disasters and effective hazard mitigation actions; conducting surveys to gather information on community needs and attitudes; assisting with the conduct of public meetings; providing a venue to receive comments from the public who cannot attend public meetings, and preparing the community for issuance of the LMS plan and promoting public acceptance of the strategy developed by the Task Force.

**Temporary** Subcommittees - The responsibilities of **temporary subcommittees** will be defined at the time they are established by the chair of the Steering Committee.

### **C. *LMS Support Planner***

The general and primary responsibility of the LMS Support Planner is to coordinate and facilitate the Task Force's development of the initial DMA2K Section 322 hazard mitigation plan and the subsequent continual maintenance, monitoring, evaluation, and update of the plan on an annual and five-year planning schedule as required by 9G-22 FAC, FEMA criteria in CFR 44 Part 201, and FEMA Region IV Minimum Standards of Acceptability (and any other subsequent State and Federal requirements).

Roles and responsibilities that support the general and primary responsibility stated above include, but are not limited to, the following:

- Serve as initial point of contact for all matters relating to mitigation planning and implementation and when appropriate confer with the chair and/or vice chair, the authority specified in Article VI, or other member(s) of the Task.
- Document the planning process in the mitigation plan as required by FEMA criteria in CFR 44 Part 201, and FEMA Region IV Minimum Standards of Acceptability (and any other subsequent State and Federal requirements).
- Obtain and utilize technical assistance and/or training support from the State and FEMA or other agencies as needed by the LMS support planner and/or the Task Force.
- Provide training as needed to equip Task Force members in satisfactorily completing planning tasks.

- Read, interpret, and keep current on State and Federal mitigation planning requirements and accordingly guide the planning activities of the Task Force as necessary to ensure the community's eligibility for State and Federal mitigation and disaster funding remains in good standing.
- Work with the Task Force to collect, compile, organize, and analyze needed information for plan development. Prepare the LMS Plan as a document
- Coordinate with the County's website staff in the posting of meeting documentation, agendas, and other items to promote public information, participation, and feedback. Maintain public review documentation.
- Attend State and Federal workshops on behalf of the Task Force.
- Provide logistical and administrative support to the Task Force.

## **ARTICLE VI. AUTHORIZED COUNTY POINT OF CONTACT**

The Emergency Management Director shall be the Task Force's designated county point of contact, who is empowered by the County Board of County Commissioners to accept and disburse funds, enter into contracts, hire staff, and take such other actions as necessary in support of, or for the benefit of, the Task Force.

## **ARTICLE VII. ACTIONS BY THE TASK FORCE**

### **A. Authority for Actions**

Only the Steering Committee has the authority to take final actions in the name of the Task Force. Actions by the Working Committee and its subcommittees or LMS support planner/staff are not considered as final until affirmed by action of the Steering Committee.

### **B. Meetings, Voting and Quorum**

Meetings of the Task Force will be conducted in accord with Robert's Rules of Order, if and when deemed necessary by chair of the meeting.

Regular meetings of the full Task Force will be scheduled at least quarterly with a minimum of 7 days' notice. The different component groups of the Task Force may conduct additional and separate meetings as needed to complete tasks.

All final actions and decisions made in the name of the Task Force will be by affirmative vote of a quorum of the Steering Committee. A quorum shall 50 percent of the members of the Steering Committee in good standing at the time of the vote. Each member of the Steering Committee will have one vote. (See voting requirements for alternates in Article III, A) Voting by proxy, written or otherwise, is not permitted.

### **C. Public Meetings**

When required by statute or the policies of Santa Rosa County, or when deemed necessary by the Steering Committee, a public meeting regarding actions under consideration for implementation by the Task Force will be held.

The Task Force shall hold a minimum of two advertised public meetings during the preparation of the LMS Plan as required by FEMA Region IV Minimum Standards of Acceptability and CFR 44 Part 201.

**D. Documentation of Actions**

All meetings and other forms of action by the Task Force will be documented and made available for inspection by the public **at one or more of the following county locations:** the County's website and/or link to consultant's website, and/or the County Clerk's office or other central location. Documentation may include minutes, handouts, and sign-in sheets. In addition, the consultant/LMS Support Planner will maintain public review documentation.

**ARTICLE VIII. ADOPTION OF AND AMENDMENTS TO THE BYLAWS**

The Bylaws of the Task Force may be adopted and/or amended by a two-thirds majority vote of the members in good standing of the Steering Committee. All proposed changes to the bylaws will be provided to each member of the Steering Committee not less than ten days prior to such a vote. Voting can be accomplished at a regularly scheduled meeting, a special meeting, or via electronically utilizing email or fax so that a written confirmation of the vote can be generated.

**ARTICLE IX. DISSOLUTION OF THE TASK FORCE**

The Task Force may be dissolved by affirmative vote of 100% of the members in good standing of the Steering Committee at the time of the vote, by order of a court of competent jurisdiction, and/or by instruction of the Santa Rosa County governing body. Voting can be accomplished at a regularly scheduled meeting, a special meeting, or via electronically utilizing email or fax so that a written confirmation of the vote can be generated. At the time of dissolution, all remaining documents, records, equipment and supplies belonging to the Task Force will be transferred to Santa Rosa County position specified as the Task Force's Point of Authority in Article VI for disposition.

## ATTACHMENT A – SANTA ROSA COUNTY LMS STEERING COMMITTEE

Based on long-standing Steering Committee status prior to the establishment of these Bylaws, representatives from the following departments/organizations will serve as members of the initial Steering Committee under the Santa Rosa County LMS Task Force Bylaws. Additional Steering Committee members will be added as the Task Force as a whole grows in membership and as representation is needed to maintain a well-conceived and well-balanced Steering Committee.

Santa Rosa County LMS Steering Committee May 2003			
	Organization/Department	Primary Representative	Designated Alternate (optional)
1	Santa Rosa County Grants Department	Paula Davis, Grants Coordinator (current Task Force Chair)	
2	Gulf Breeze Chamber of Commerce	Scott Paul, Sales Manager (current Task Force V-Chair)	
3	Santa Rosa County Emergency Management	Dave Ling, Emergency Management Director	Peggy McDonald
4	Town of Jay	Linda Carden, Town Clerk	Hon. Jackie Stewart
5	City of Milton	Donna Adams, City Manager	Bill Stubstad
6	Santa Rosa County Building Permits Department	Rhonda Royals, Community Rating System (CRS) Coordinator	
7	Santa Rosa County Planning Department	Beckie Faulkenberry, Planning Director	Tim Brown
8	American Red Cross	Rosalyn Bates, Mitigation Specialist	
9	Board of County Commissioners	Bob Cole, Commissioner District II	

### Local Mitigation Strategy Task Force Structure

The Mitigation Planning Process starts with the development of the Task Force as an organization and obtaining participation from the local government jurisdictions and key organizations and institutions.

#### Working Committee

Planning and Public Information Responsibilities  
Participation is not limited in any manner.

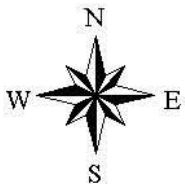
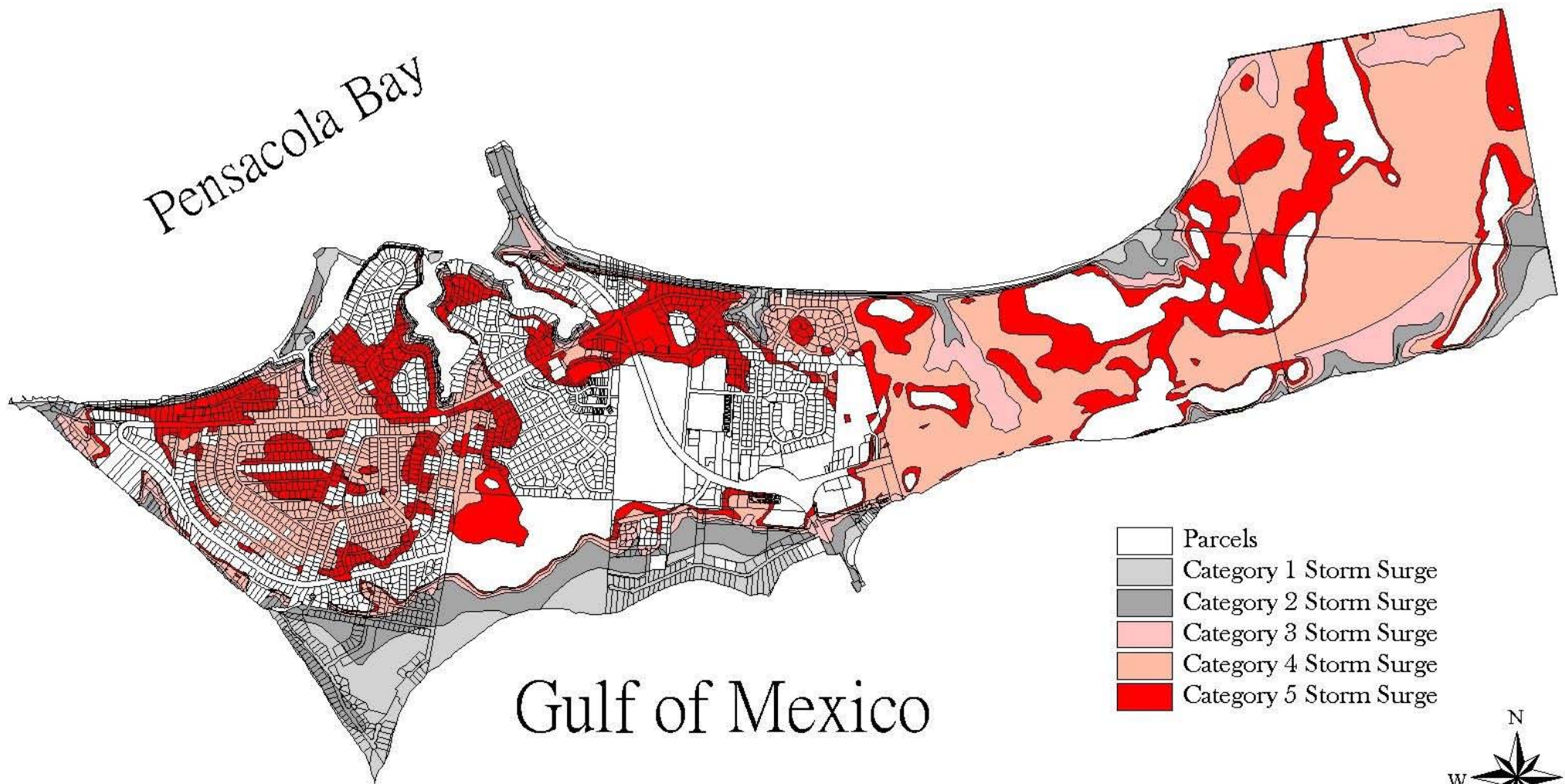
#### Steering Committee Core Decision-Making and Voting Body

Ideally, these members have authority or responsibility for implementing the task force's proposed mitigation initiatives.

To maintain good standing, member must not have more than two unexcused absences per year. Members may designate alternates.

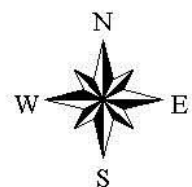
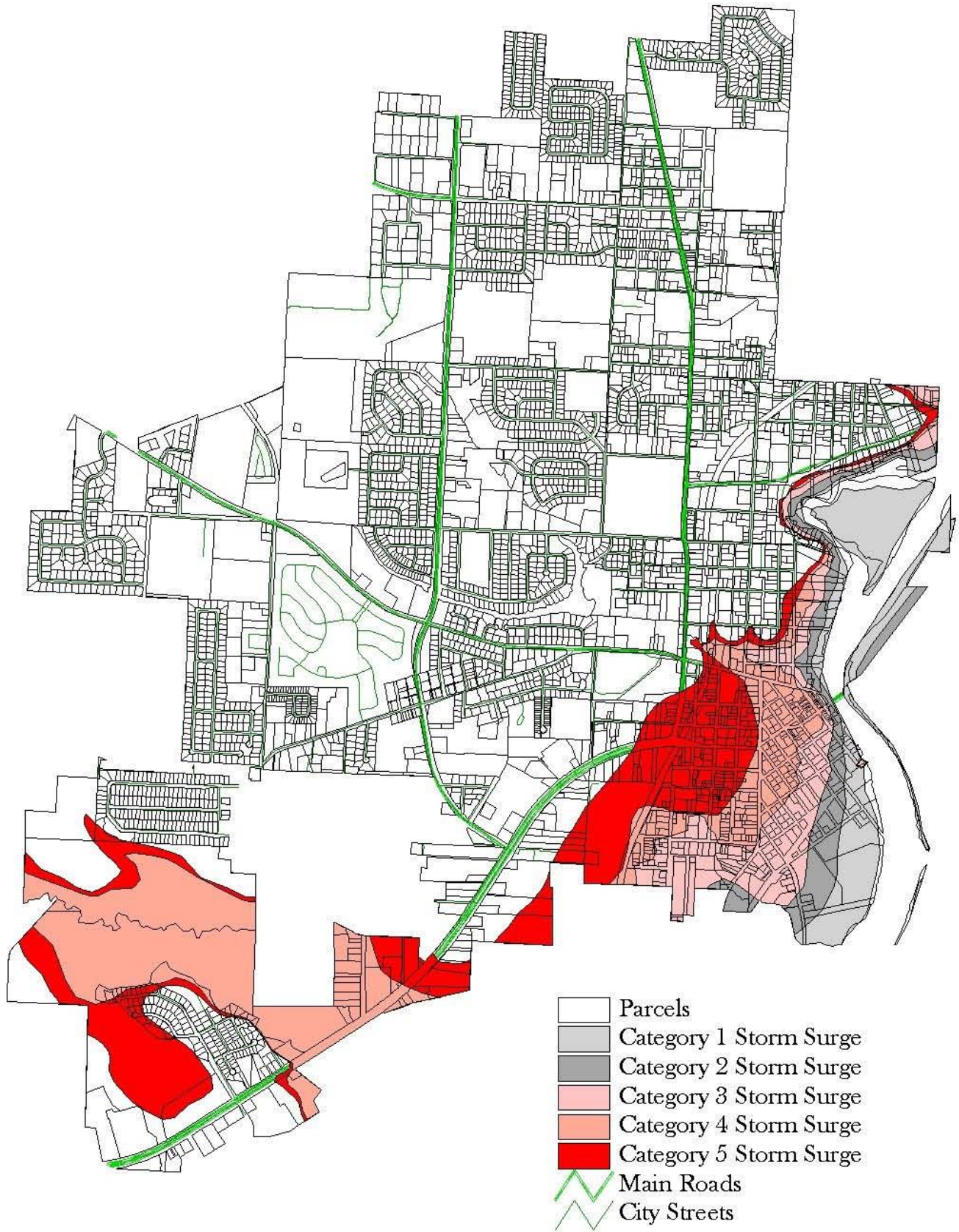
A quorum shall be 50% of the members in good standing of the Steering Committee.

# City of Gulf Breeze: Storm Surge Zones

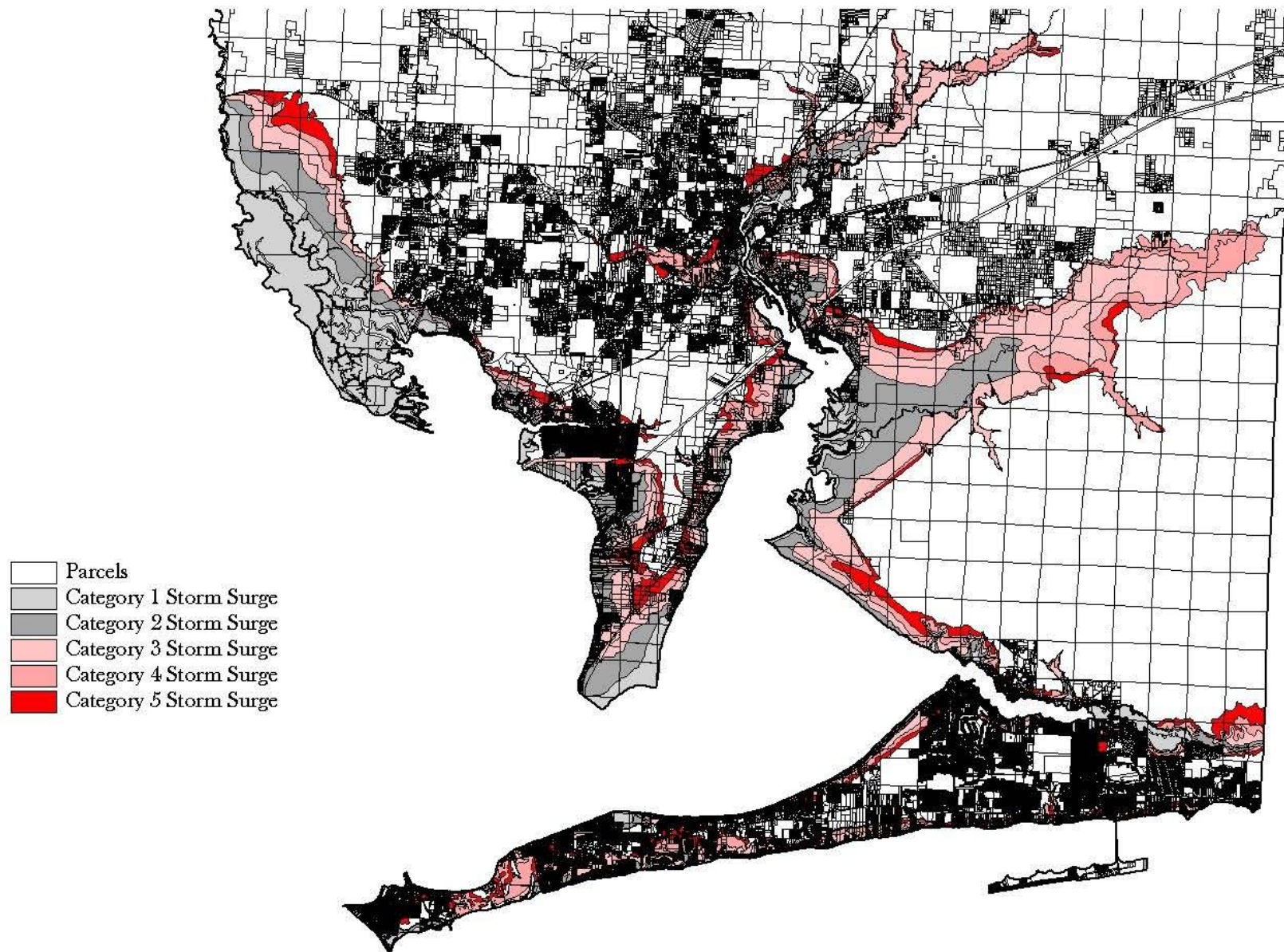




# City of Milton: Storm Surge Zones

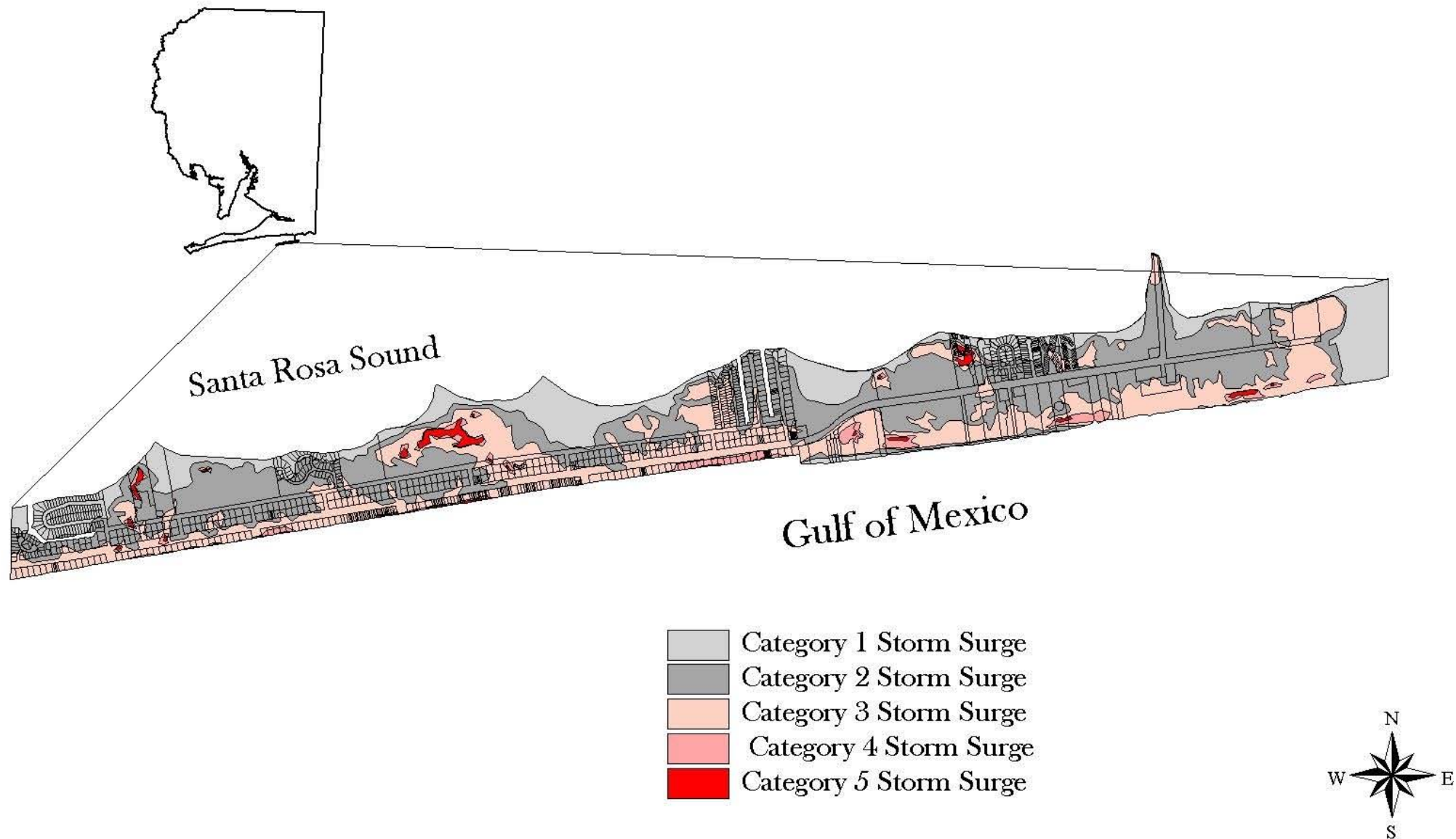


# Santa Rosa County: Storm Surge Zones

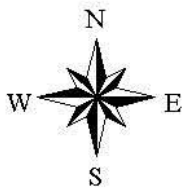
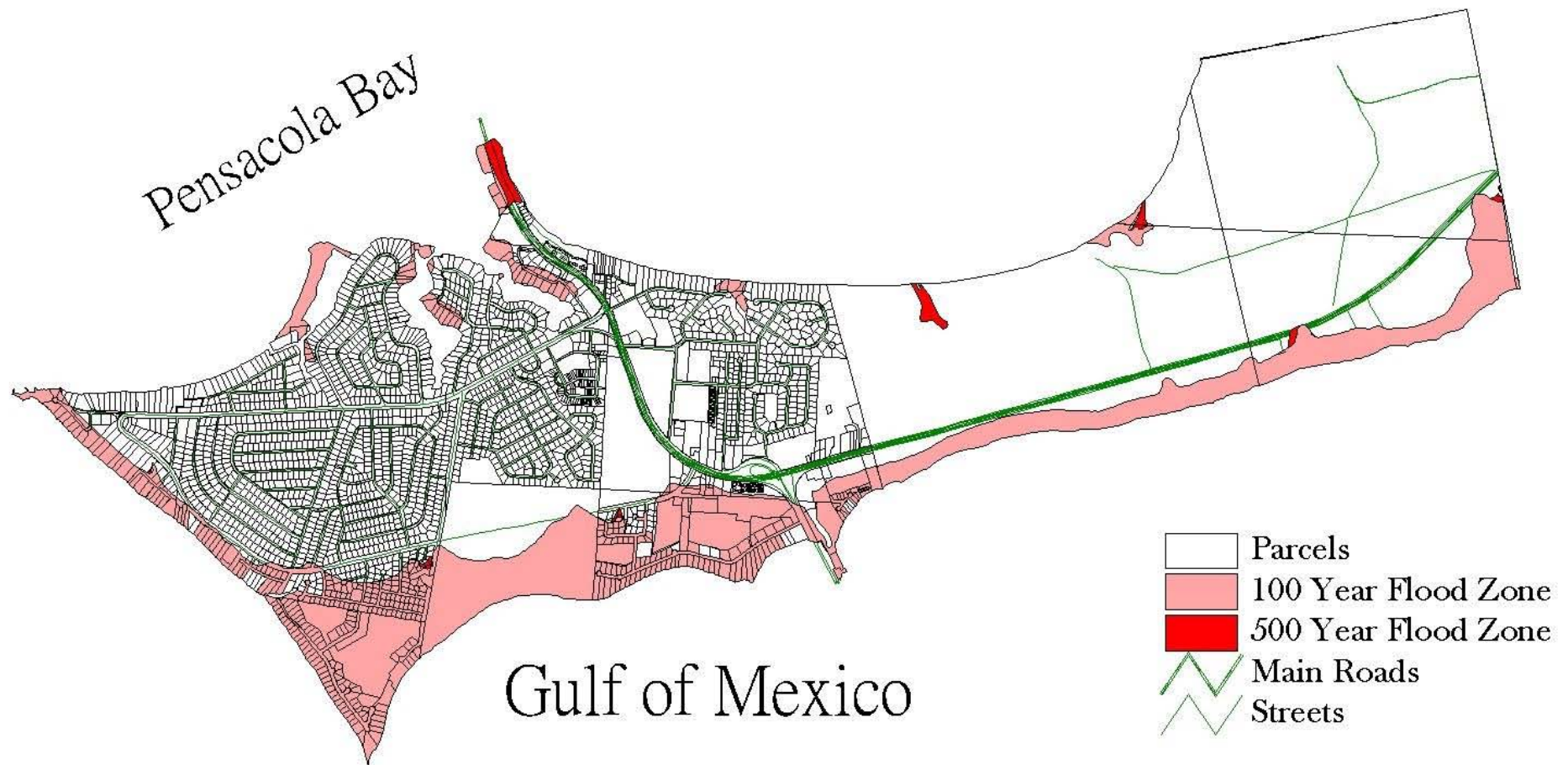




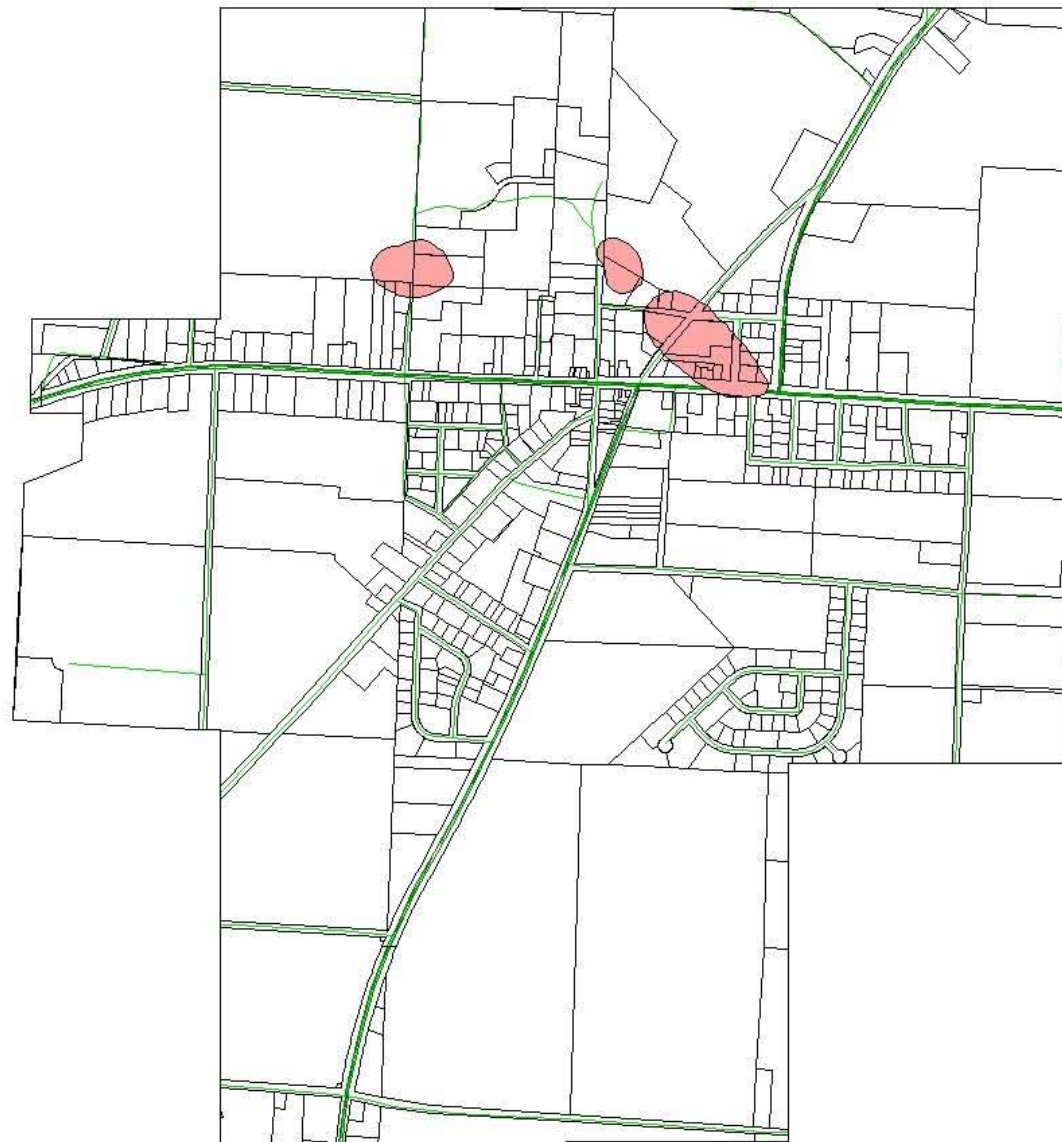
# Unincorporated Navarre Beach: Storm Surge Zones



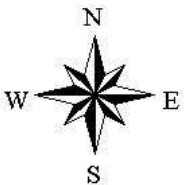
# City of Gulf Breeze: 100 and 500 Year Flood Zones



# Town of Jay: 100 Year Flood Zone

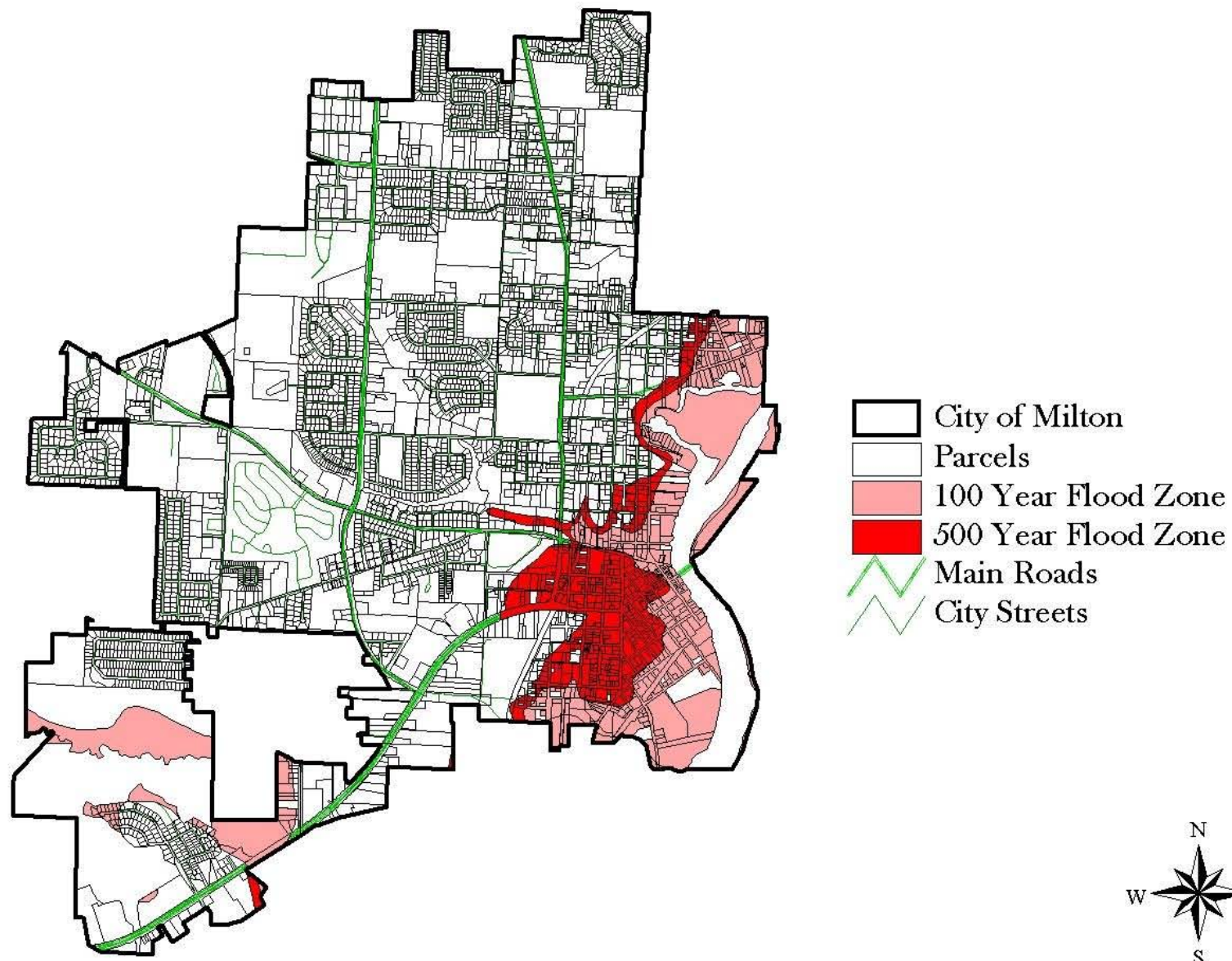


- Parcels
- 100 Year Flood Zone
- Main Roads
- Streets



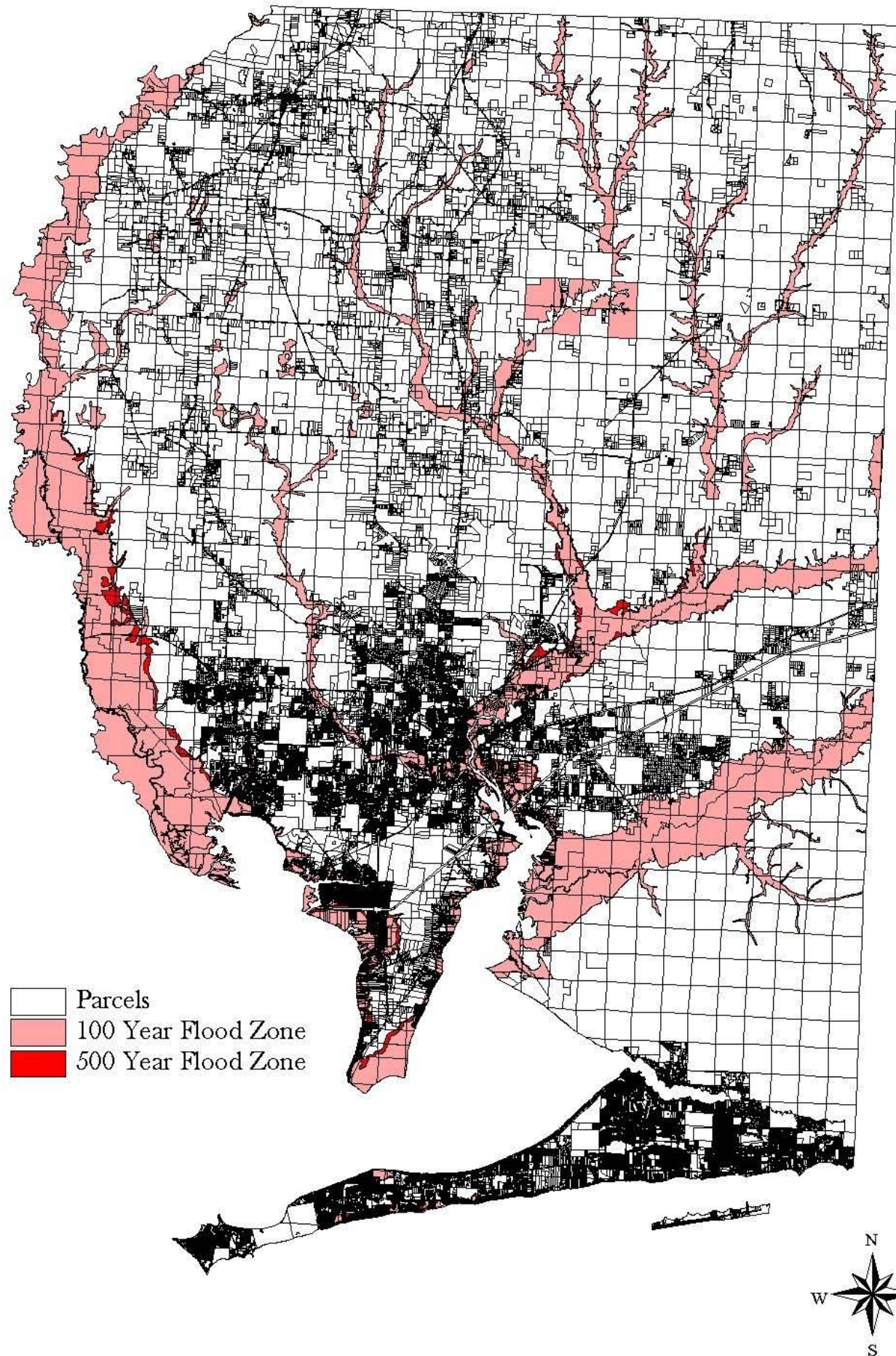


# City of Milton: 100 and 500 Year Flood Zones

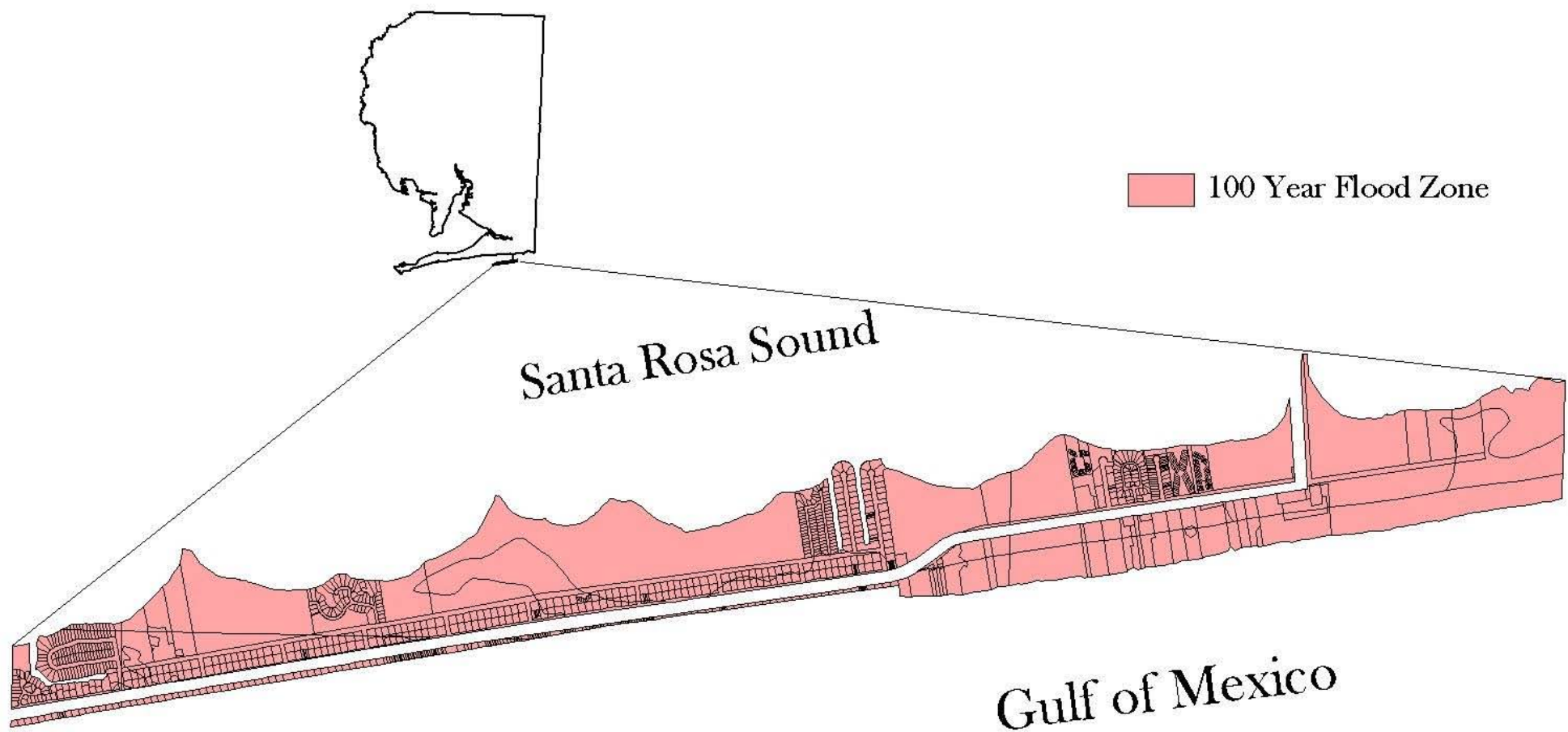




# Santa Rosa County: Flood Zones

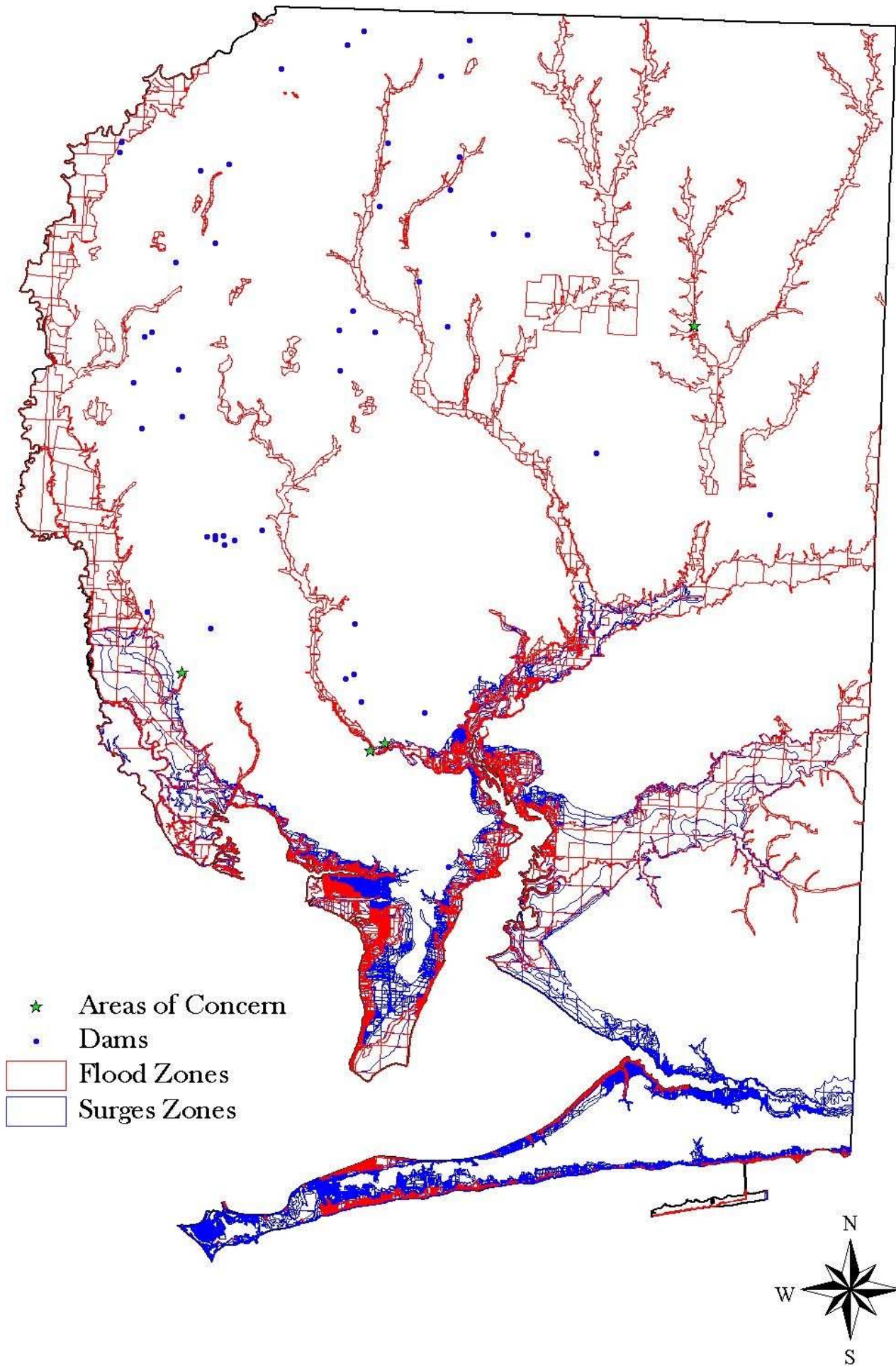


# Unincorporated Navarre Beach: 100 Year Flood Zone



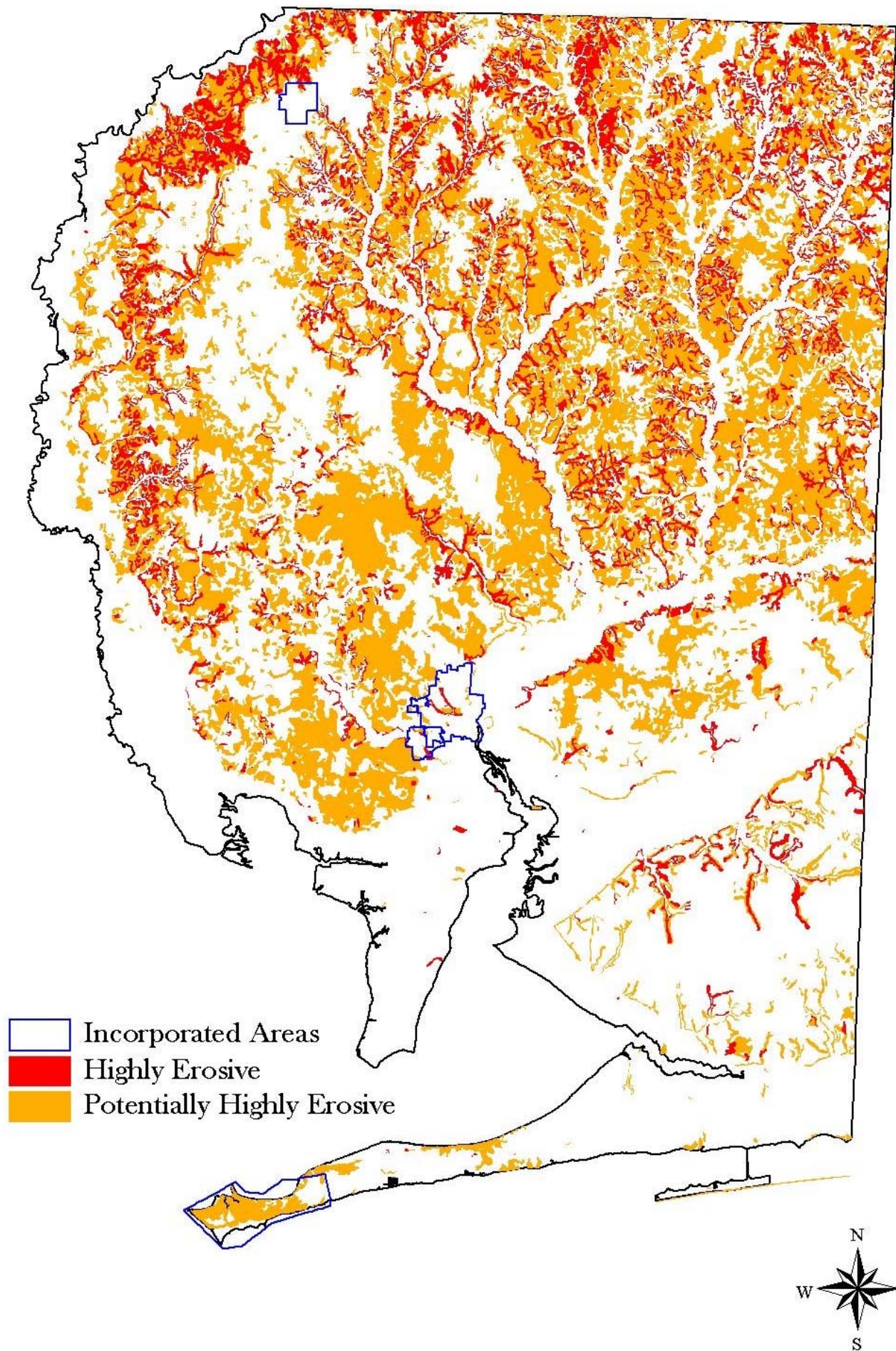


# Santa Rosa County: Dam Safety Concern Areas



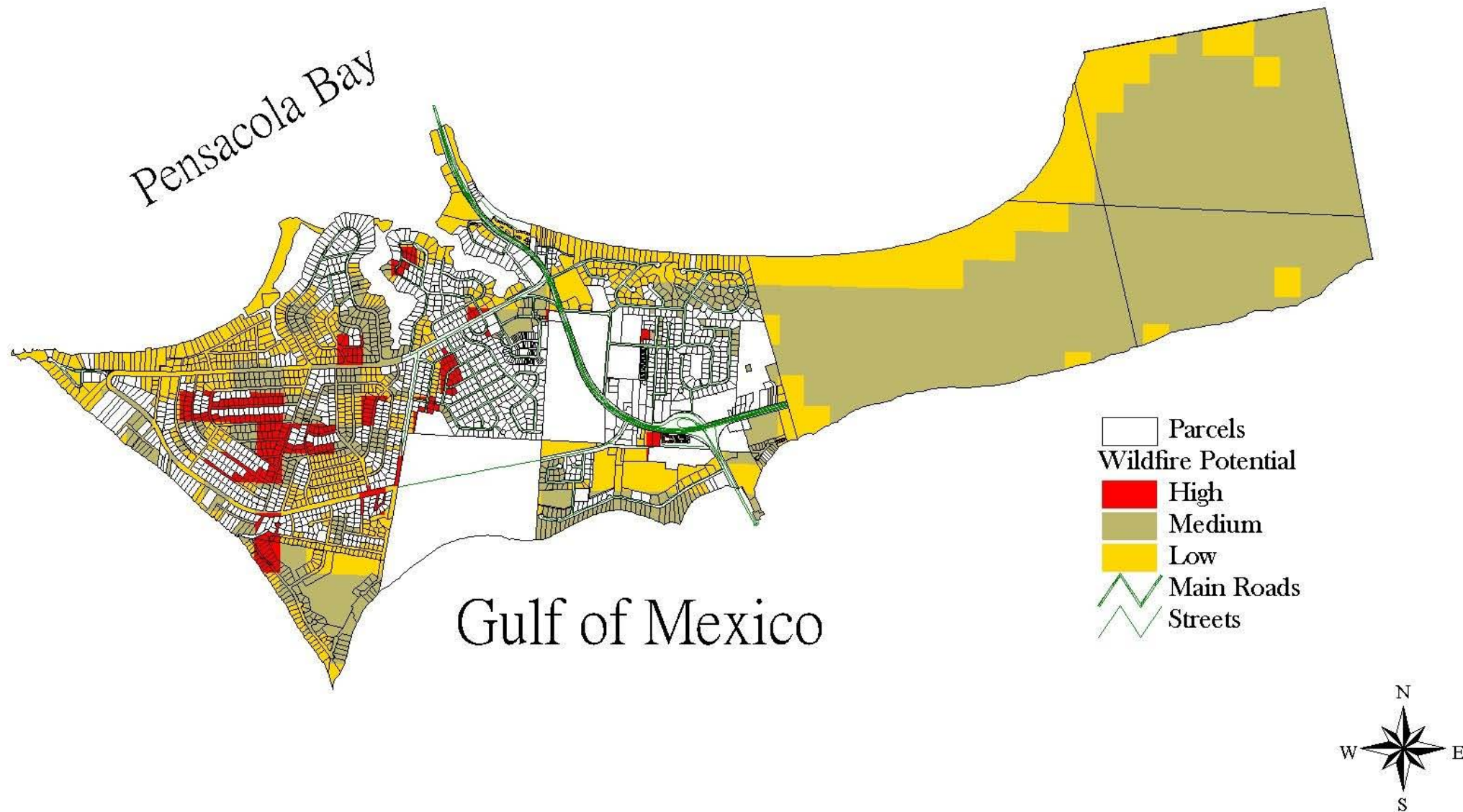


# Santa Rosa County: Erosive Soils

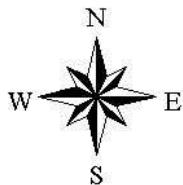
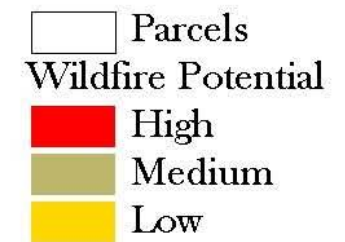
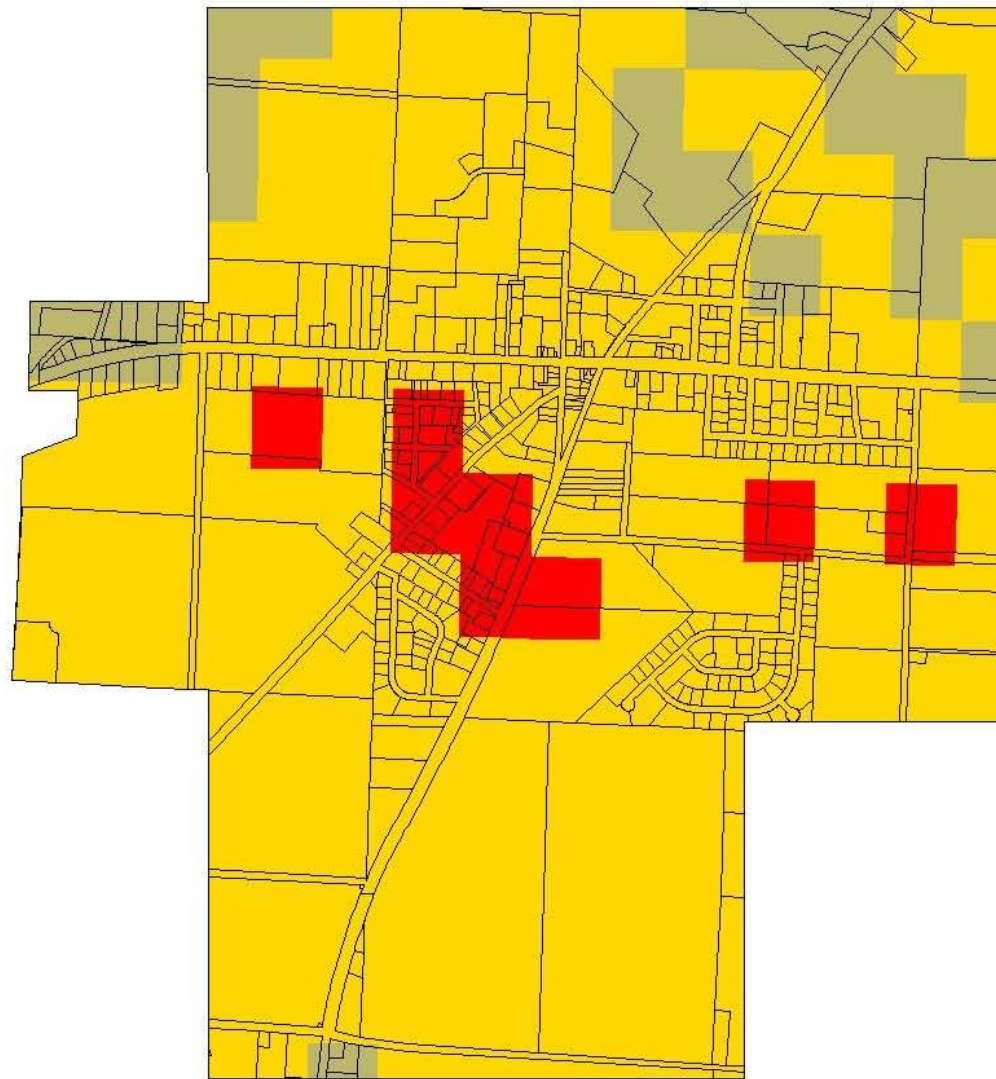




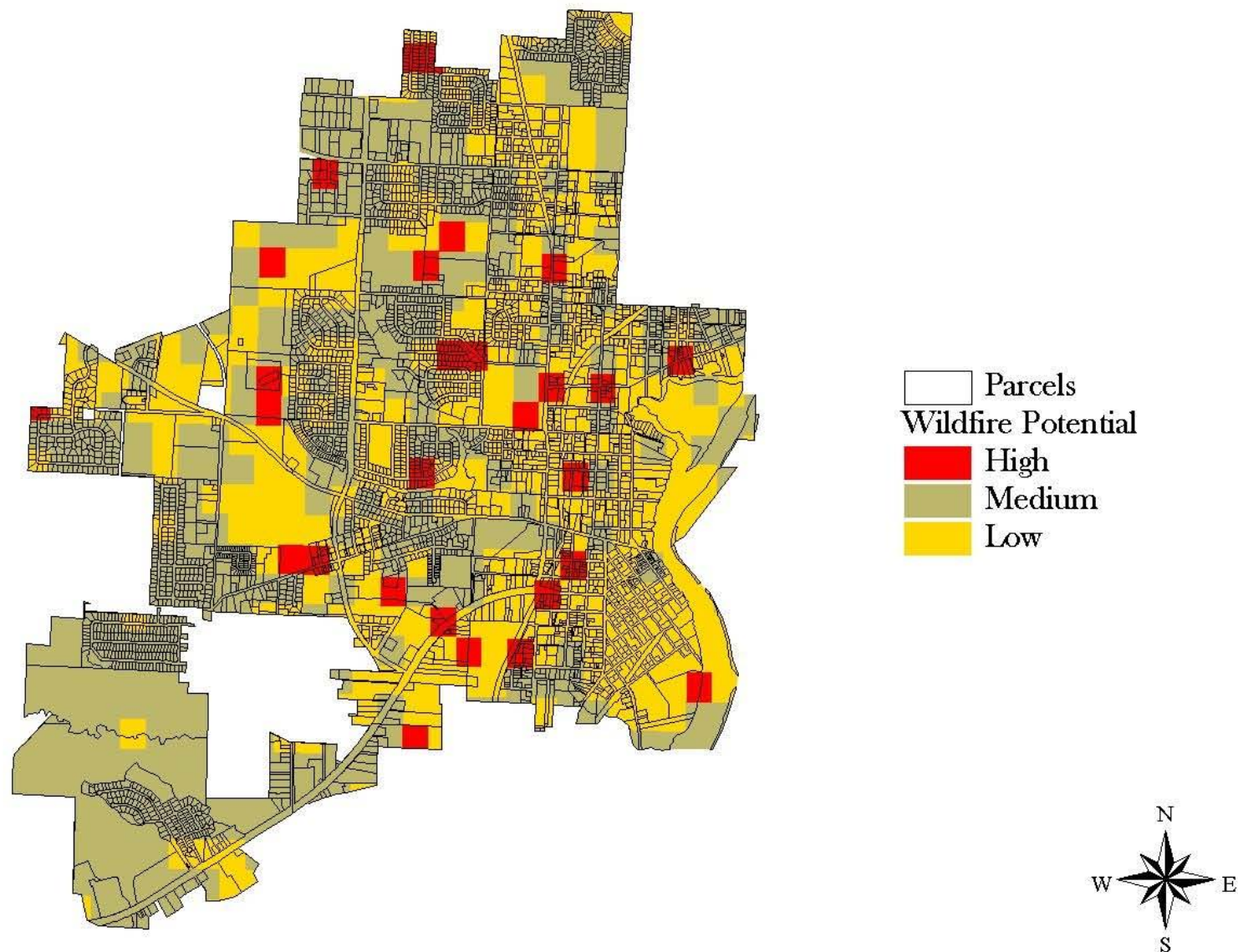
# City of Gulf Breeze: Wildfire Potential Areas



# Town of Jay: Wildfire Potential Areas

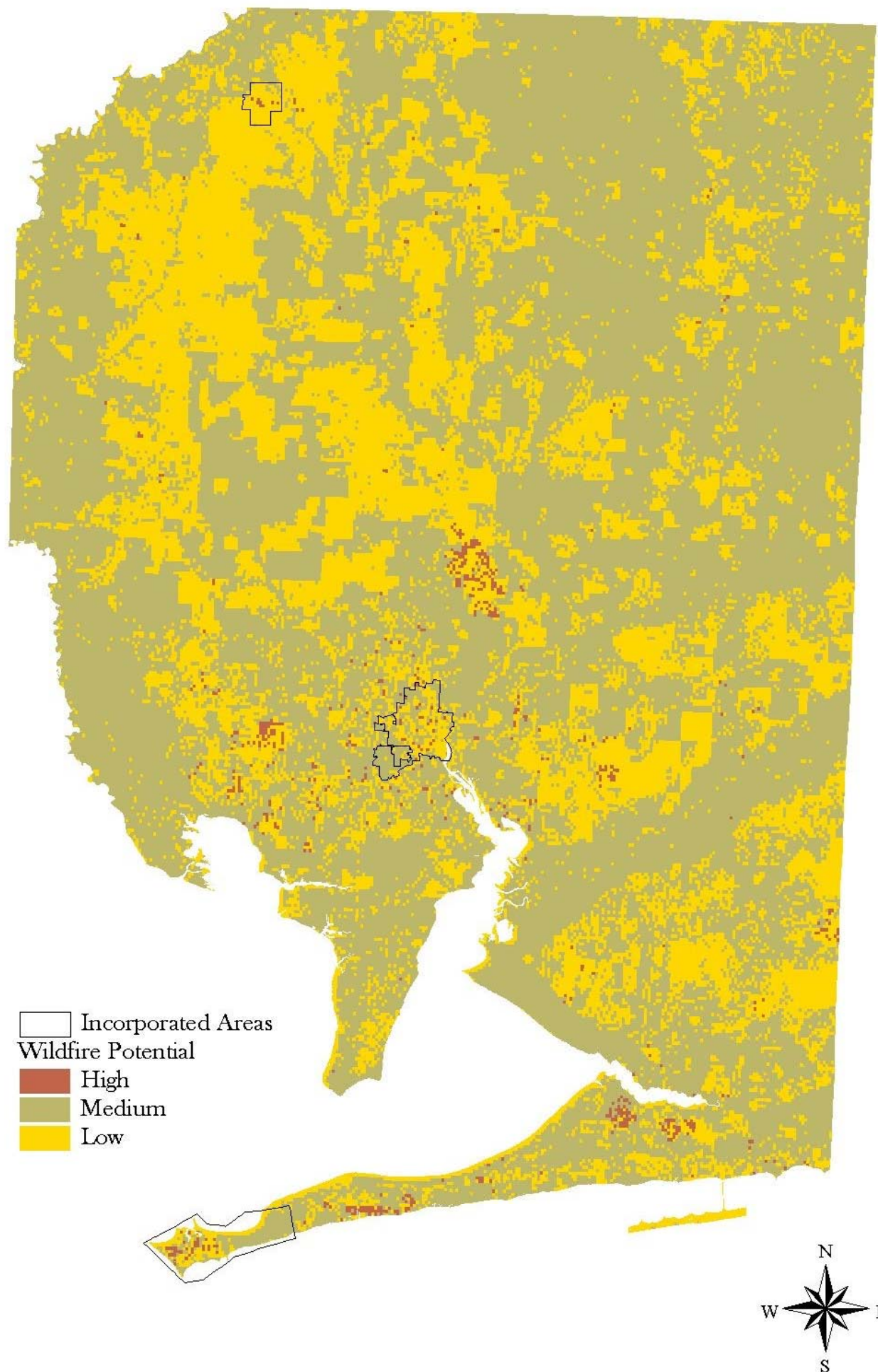


# City of Milton: Wildfire Potential Areas

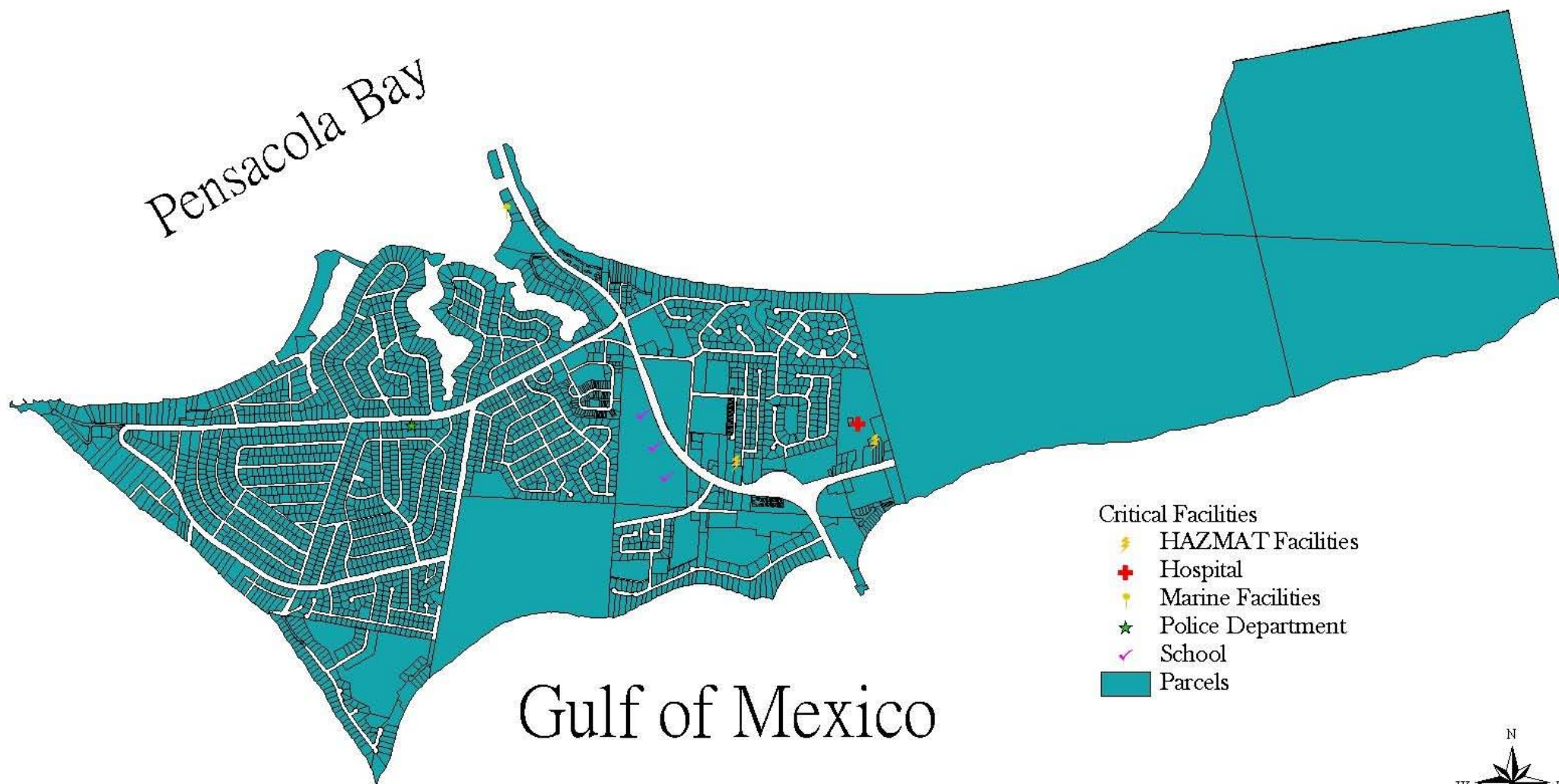




# Santa Rosa County: Wildfire Potential

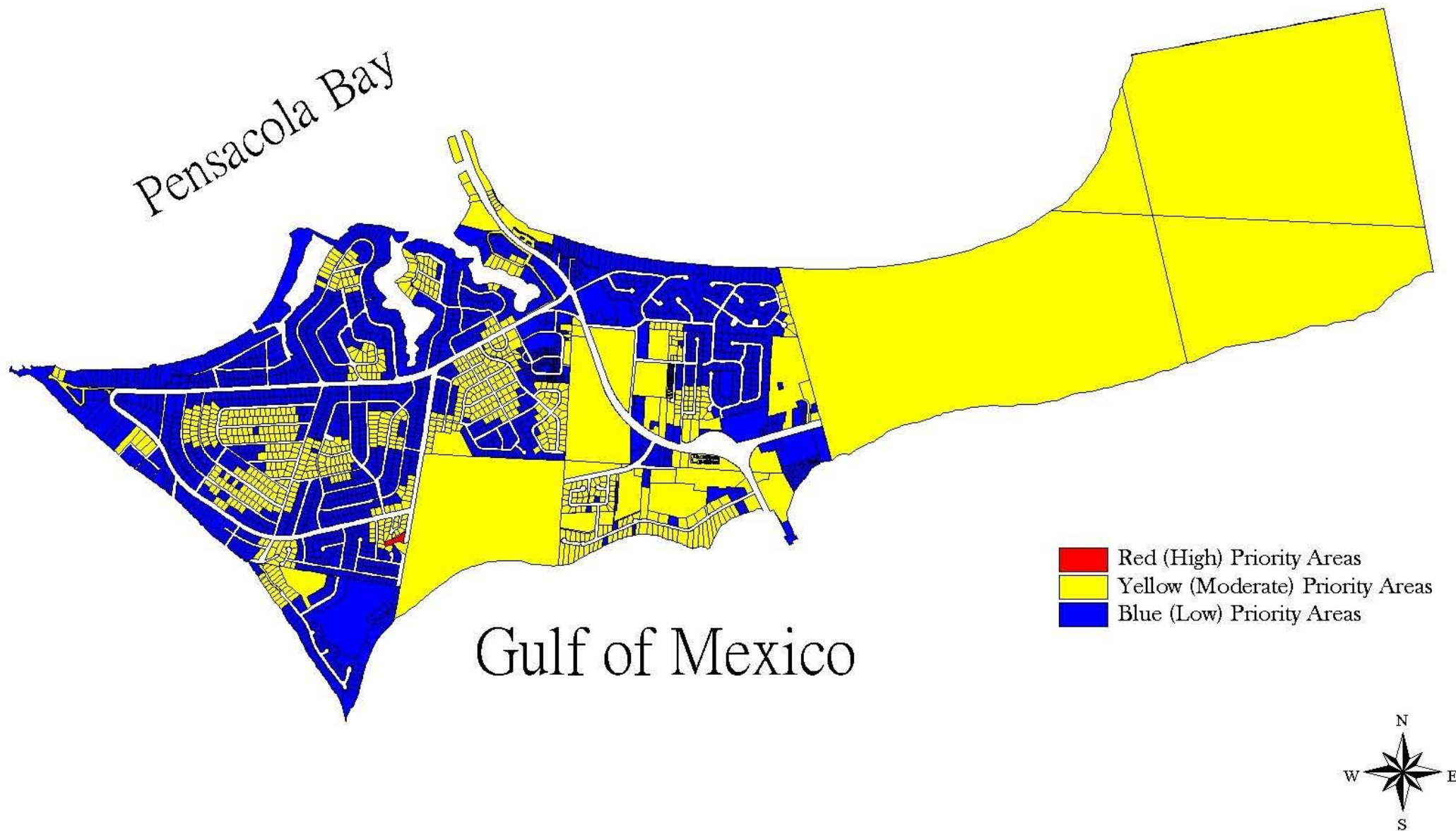


# City of Gulf Breeze: Critical Facilities





# City of Gulf Breeze: Mitigation Priority Areas



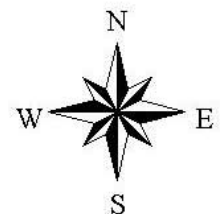


# Town of Jay: Critical Facilities

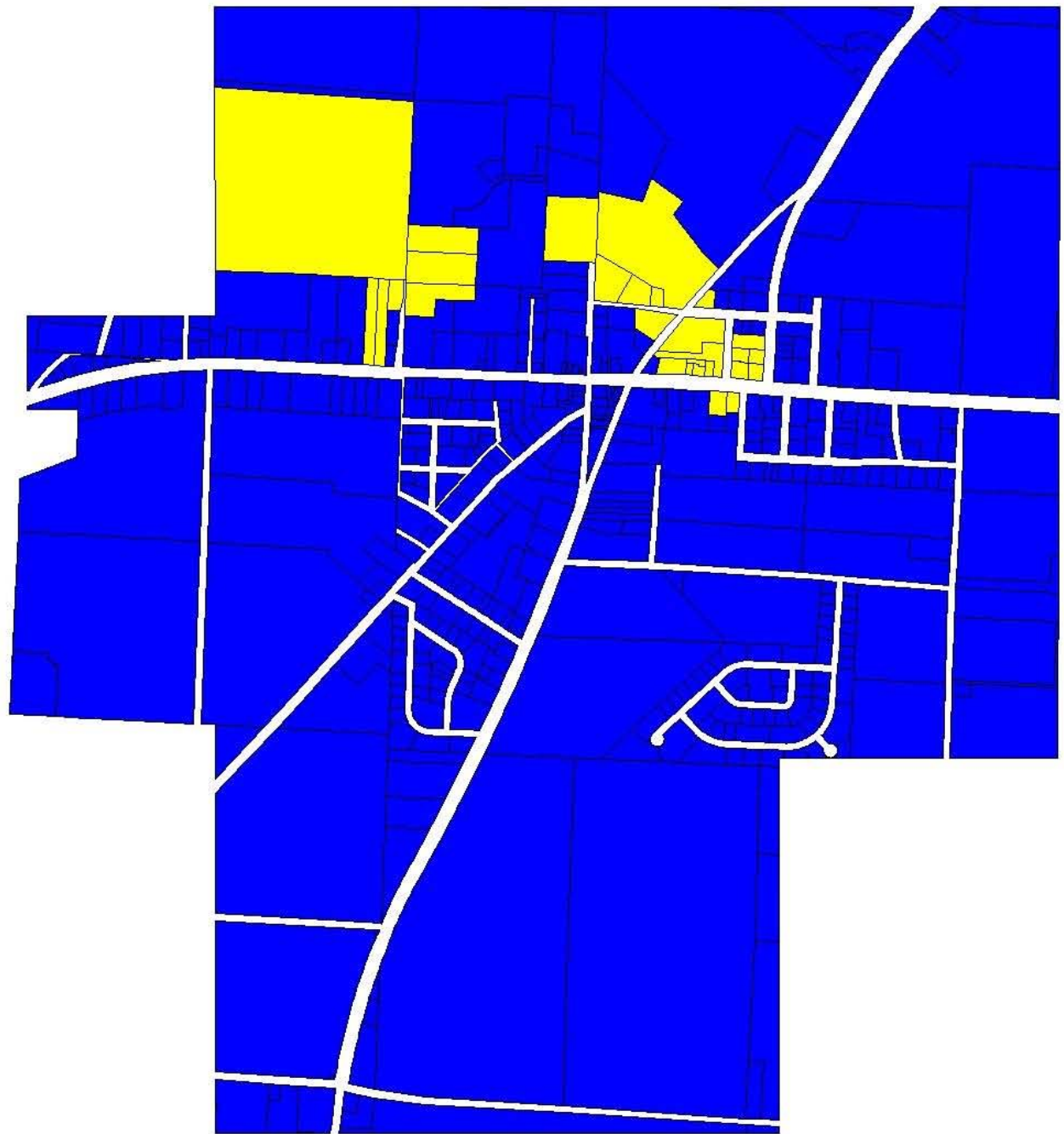




## Critical Facilities

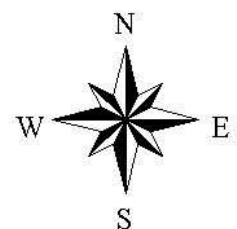
-  Fire Department
-  HAZMAT Facility
-  Hospital
-  Police Department
-  School
-  Parcels



# Town of Jay: Mitigation Priority Areas

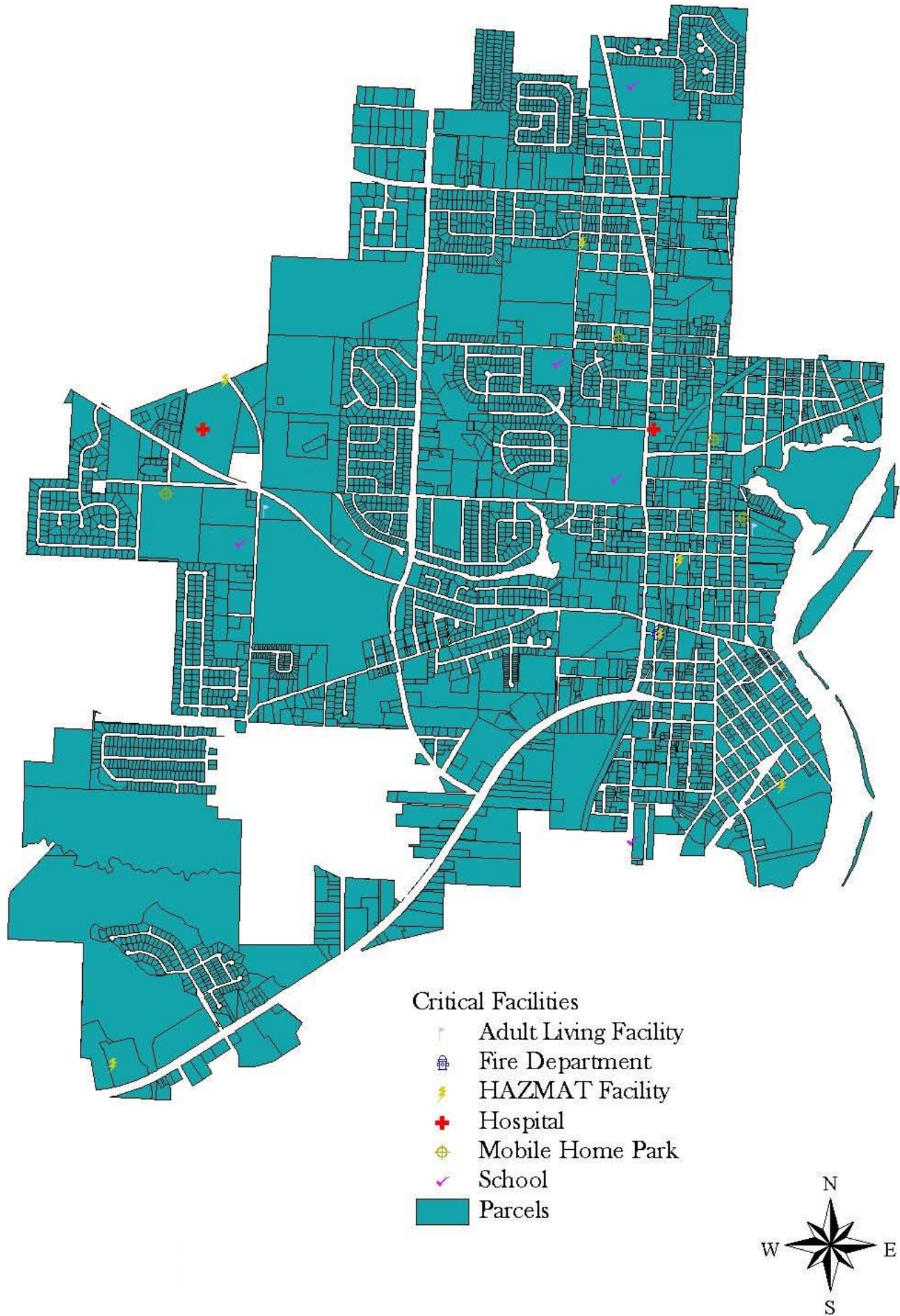


 Yellow (Moderate) Priority  
 Blue (Low) Priority

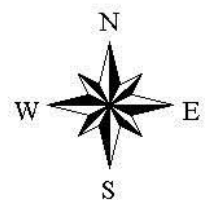
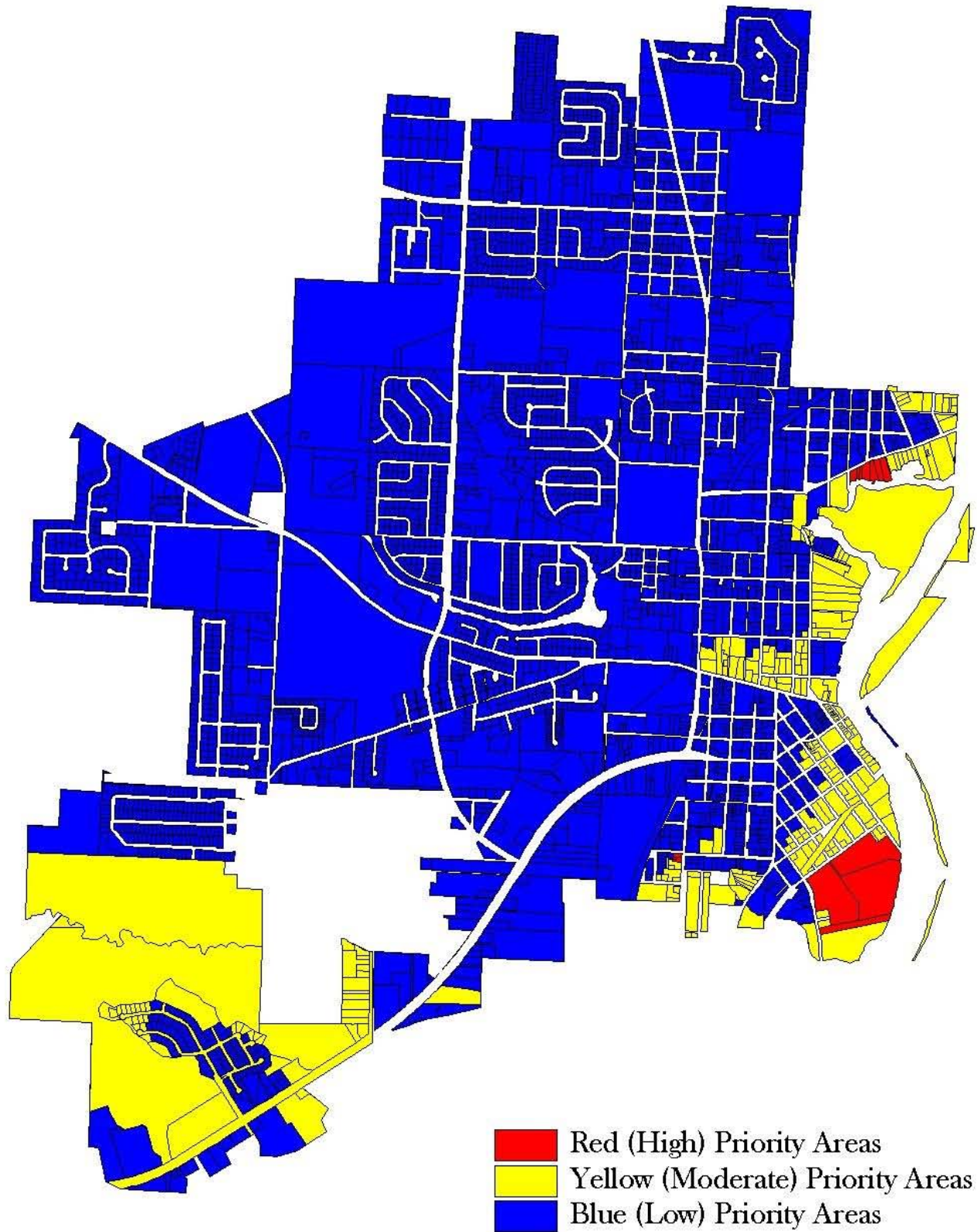




# City of Milton: Critical Facilities

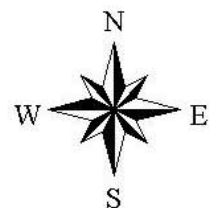
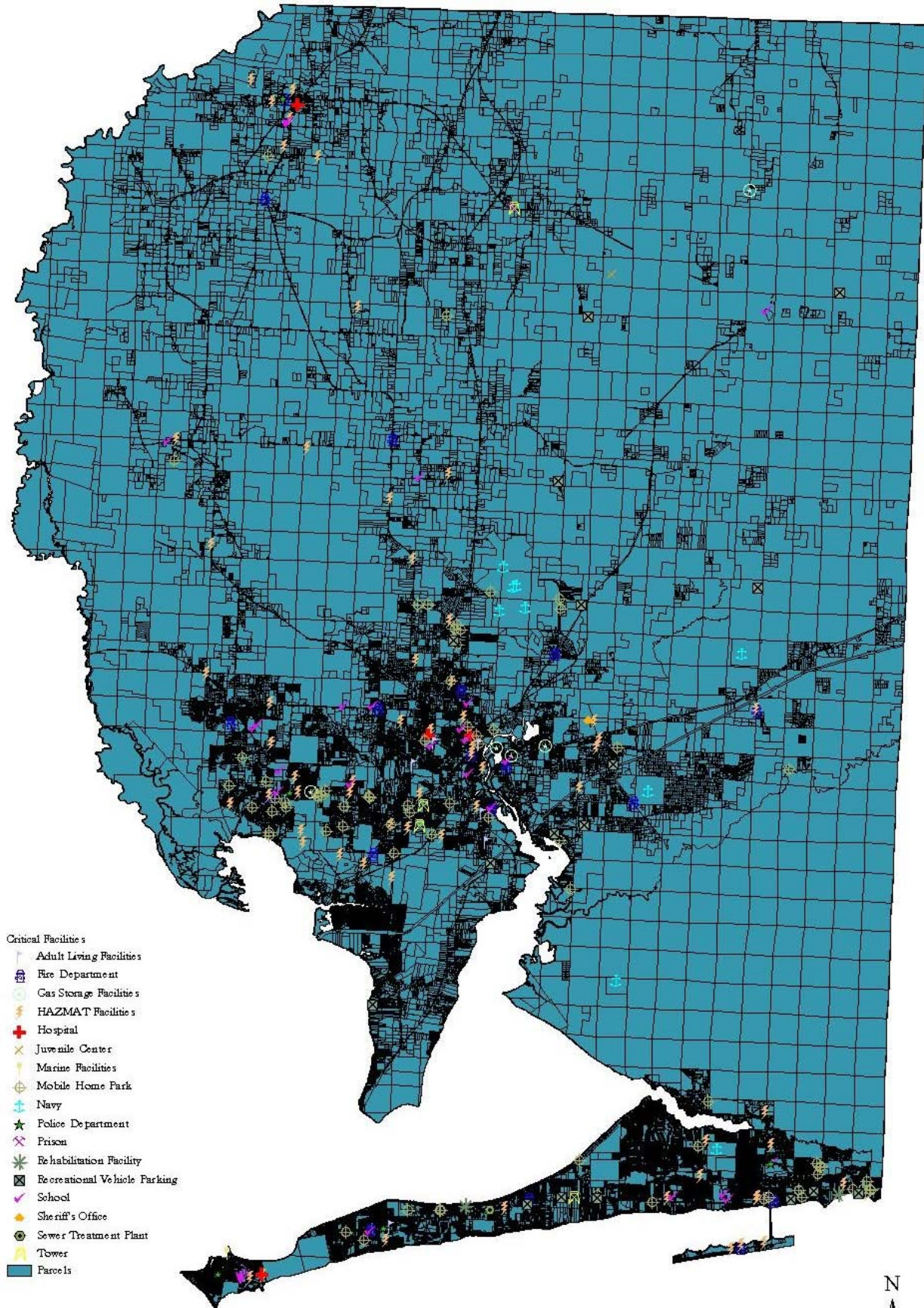


# City of Milton: Mitigation Priority Areas



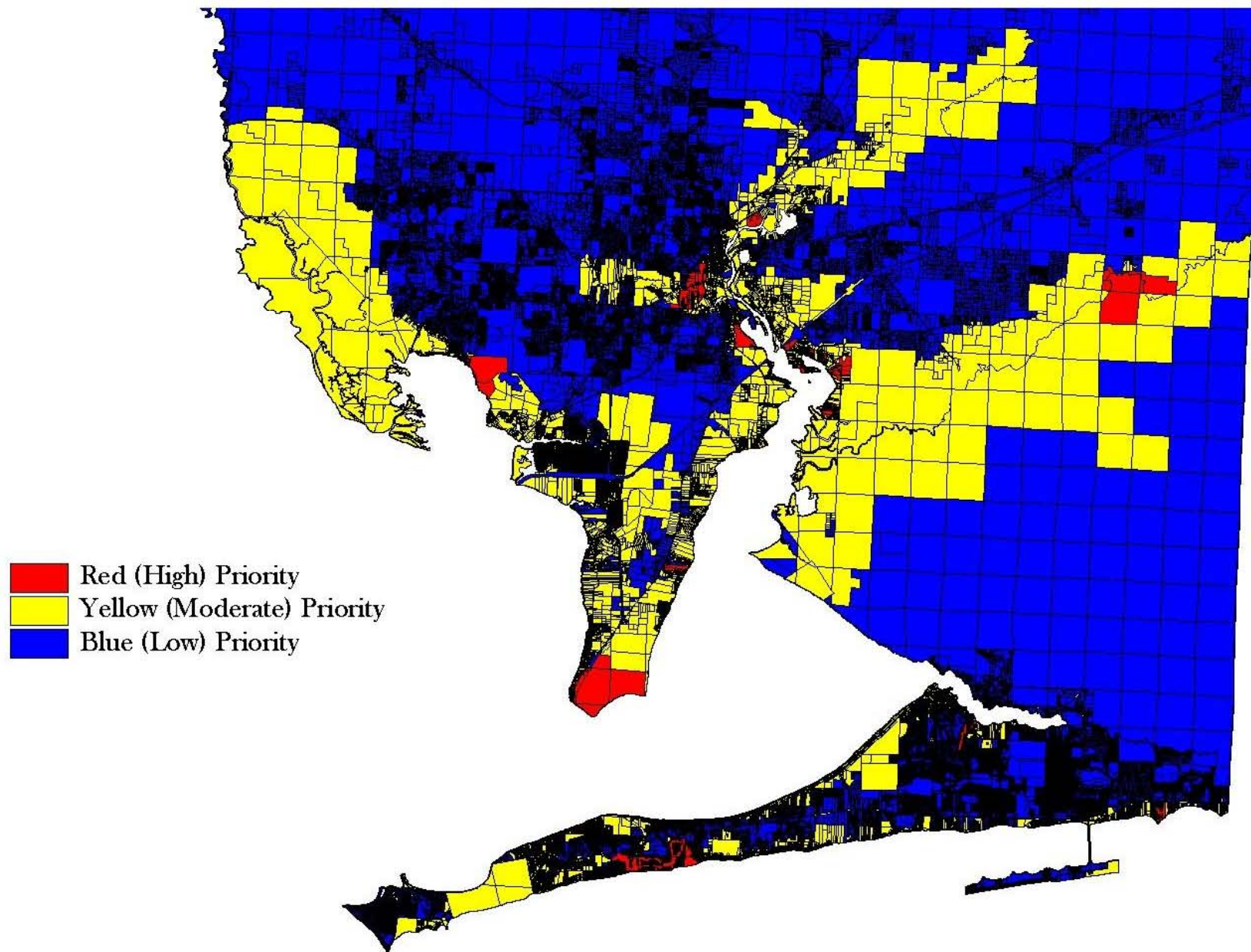


# Santa Rosa County: Critical Facilities

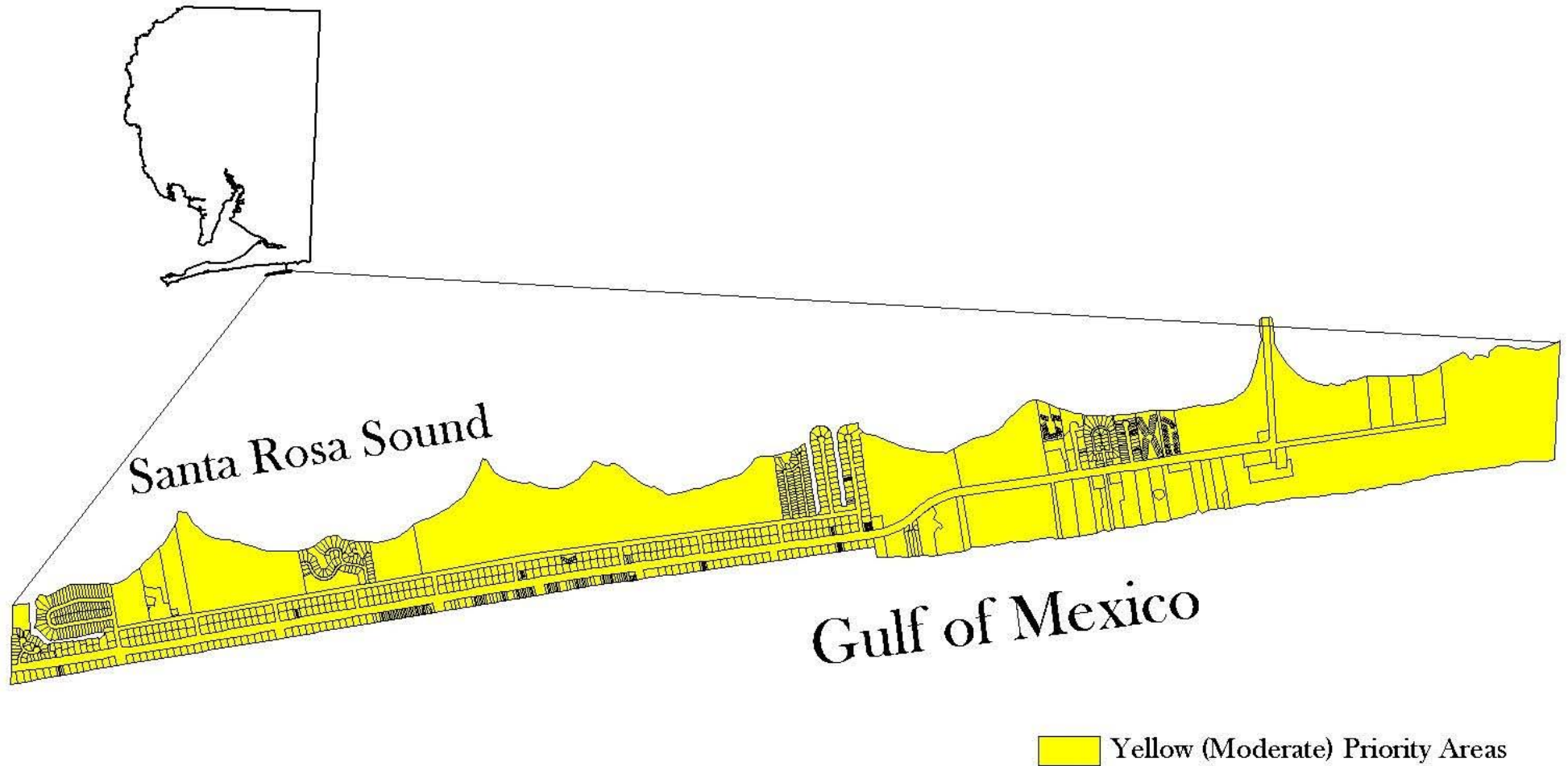




# Santa Rosa County: Mitigation Priority Areas



# Unincorporated Navarre Beach: Mitigation Priority Areas



## **Appendix 6.4**

### **LMS Mitigation Initiatives and Priorities**

(NOTE: Because the Initiatives and Priorities Listings are a dynamic and living document, this appendix will be kept in a separate file, not directly in this appendix attached within the LMS plan itself. This allows for the list to be more easily and rapidly managed. The latest list will be available on the Santa Rosa County LMS website or is available by calling Ecology & Environment Inc. at 850-435-8925. Files can be provided in PDF or MS Word format.)